AN OPEN PILOT CLINICAL STUDY ON "UTHIRAVATHASURONITHAM (RHEUMATOID ARTHRITIS)" WITH THE EVALUATION OF SIDDHA TRIAL DRUG "GANDHAGA RASAYANAM" (INTERNAL) AND "NAVANATHA SITTHA THAILAM" (EXTERNAL).

The dissertation Submitted by

DR.M.SHRISARANYA, B.S.M.S

Registration No. 321213103

Under the Guidance of

Dr. M.MOHAMED MUSTHAFA, M.D(S)

Dissertation submitted to

THE TAMILNADU DR. MGR MEDICAL UNIVERSITY

CHENNAI-600032

For the partial fulfillment of the

Requirement to the Degree of

DOCTOR OF MEDICINE (SIDDHA)

BRANCH-III-SIRAPPU MARUTHUVAM

POSTGRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

THE GOVERNMENT SIDDHA MEDICAL COLLEGE

CHENNAI -106

OCTOBER 2017

DECLARATION BY THE CANDIDATE

I hereby declare that this dissertation entitled **An open pilot clinical study on "Uthiravathasuronitham (Rheumatoid arthritis)" with the evaluation of Siddha trial drugs "Gandhaga rasayanam" (Internal) and "Navanatha sittha thailam" (External)** is a bonafide and genuine research work carried out by me under the guidance of **Dr. M. MOHAMED MUSTHAFA, M.D (S),** Post Graduate Department of **Sirappumaruthuvam**, Govt. Siddha Medical College, Arumbakkam, Chennai-106 and the dissertation has not formed the basis for the award of any Degree, Diploma, Fellowship or other similar title.

Date: **Signature of the Candidate**

Place: Chennai M.SHRISARANYA

GOVT. SIDDHA MEDICAL COLLEGE, CHENNAI-106

CERTIFICATE BY THE GUIDE

This is to certify that the dissertation entitled **An open pilot clinical study on "Uthiravathasuronitham (Rheumatoid arthritis)" with the evaluation of Siddha trial drugs "Gandhaga rasayanam" (Internal) and "Navanatha sittha thailam" (External)** is submitted to the Tamilnadu Dr. M. G. R. Medical University in partial fulfillment of the requirements for the award of degree of M.D (Siddha) is the bonafide and genuine research work done by **M.SHRISARANYA** under my supervision and guidance. The dissertation has not formed the basis for the award of any Degree, Diploma, and Associate ship, Fellowship or other similar title.

Date: **Seal & Signature of the Guide**

Place: Chennai **Dr. M. MOHAMED MUSTHAFA, M. D (S),**

ENDORSEMENT BY THE HOD, PRINCIPAL/HEAD OF THE INSTITUTION

This is to certify that the dissertation entitled **An open pilot clinical study on "Uthiravathasuronitham (Rheumatoid arthritis)" with the evaluation of Siddha trial drugs "Gandhaga rasayanam" (Internal) and "Navanatha sittha thailam" (External)** is a bonafide work carried out by **M.SHRISARANYA** during the year 2012-2014, 2016-2017 under the guidance of **Dr. M. MOHAMED MUSTHAFA,M.D (S),** Post Graduate Department of SirappuMaruthuvam, Govt. Siddha Medical College, Chennai - 106.

Seal & Signature of the HOD **Seal &Signature of the Principal**

Date: **Date:**

Place: Chennai **Place:** Chennai

ACKNOWLEDGEMENT

ACKNOWLEDGEMENT

First of all I am grateful to Almighty God who in every moment of life always with me and blessed me.

It is a time for me to express my gratitude to the **Vice - chancellor**.The Tamilnadu Dr.M.G.R Medical University, Guindy, Chennai and to the **Commissioner** of Indian Medicine and Homeopathy Department, Arumbakkam, Chennai-106 for the giving permission to do the dissertation.

No words make articulate to acknowledge didactic guidance rendered by my guide **Dr. M. MOHAMED MUSTHAFA M.D(s)**, Reader, Government siddha medical college, Chennai. I sincerely express my boundless reverence for his excellent guidance, constant encouragement, timely advice and thoughtful criticism.

I convey my thanks to **prof, Dr. K. KANAGAVALLI M.D(S),** Principal, Govt Siddha Medical College, Arumbakkam for providing all favour facilities in the college.

I would like to show my gratitude to **Dr.T.R.SIDDIQUE ALI M.D(S),** post graduate Dept of Sirappu Maruthuvam for his support in this study.

It is my gratitude to **Dr.G.SEKAR M.D(S),** post graduate Dept of Sirappu Maruthuvam, for his support in this study.

I would like to convey my gratitude to **Prof.Dr.V.VELPANDIAN, M.D(S), PhD.**PG Dept of Gunapadam, with his inspiration and great efforts to explain the Pharmacological activity for my study.

It is my privilege to express intense gratitude to the **Prof. SELVARAJ**, Head of the department, Dept of Bio chemistry, Govt siddha medical college, Arumbakkam, Chennai-600106.

It is my gratitude to the **Prof. SURESH KUMAR**, Head of the department, Dept of Microbiology, Govt siddha medical college, Arumbakkam, Chennai-600106.giving me valuable knowledge about my in-vitro study.

It is my gratitude to the **Mr. SANKARANARAYANAN, Ph.D**, Head of the department, Dept of Medicinal Botany, Govt siddha medical college, Arumbakkam, Chennai-600106.giving me valuable knowledge about my in-vitro study.

My sincere thanks to **Dr. P. SATHYA RAJESWARAN, M.D(S)**, Scientist II, Central Research Institute, Chennai, His skills and advices were of great value for completing my work.

My sincere thanks to **Chairman and Members of Institutional Ethical Committee (IEC)** members, Government siddha medical college, Chennai. for their approval.

I am very much grateful to **Mrs. SHAKILA Msc, PhD**, Research officer SCRI, Chennai-106, for their guidance and support in physico- chemical analysis and authentication of metals and minerals.

I express my sincere thanks to **Dr. P. MURALI DHARAN**, Pharmacologist,C. L. Baid Mehta College of pharmacology, Thoraipakkam for his assistance in the toxicity studies.

It is a pleasure to thank for all the **LABORATORY STAFFS** of Govt siddha medical college and Arignar Anna Govt hospital for Indian Medicine & homeopathy, Arumbakkam, Chennai-106.

I wish to thank Dr. Manivasagam B.S.M.S, M.sc Epidemiology for helping to do Biostatistical analysis.

I am also my thankful to our librarian **Mr.V.DHANDAYUTHAPANI**, Mcom, M.lis, librarian, Dr. Ambedkar library GSMC, Chennai-106, for his help, in literature collection.

I am very thankful to my **PATIENTS** for their kind co-operation who had participated in this trial.

I am thankful to **COLLEAGUES, AND JUNIORS** also my **CLASSMATES** of SirappuMaruthuvam department, Chennai for their support to complete my dissertation work.

INTRODUCTION

INTRODUCTION

Siddha system of Medicine is an antidiluvian system of medicine which is developed and enriched by paramount powers called Siddhars .Siddha system of Medicine is nothing but a part of tamil civilization which is the only civilization alive Pre-Historical Periods.

As per traditional Fiction, it is considered that lord Shiva uncoiled his Knowledge about Siddha to his divine concomitant goddess parvathi. She then revealed it to nandidev ,who inturn handed it to primordial guru AGASTHIYAR ,who in turn handed it to his disciples.

The Word “Siddha” is derived from the root word “Siddhi” Which means an object to be Obtained (or) Attained . Siddhi mainly deals with Ashtama Siddhi ie.., 8 Supernatural powers. The persons who gained the above said powers are called as Siddhars.

Siddhars are considered as the great experts. They are highly cultured ,intellectual & Spiritual along with the Supernatural Powers.Siddhars are well-versed in handling 4 different divisions which are related & inter-mingled with each other(1. Vadham; 2.Vaidyam; 3.Gnanam & 4.Yogam).

The art of Longevity and the attempts of immortalising the corporeal human body were Considered as the ultimate Goal of Siddhars. This goal is achieved by deep & severe yogic practices; including years of periodic fasting& medication and gains Supernatural powers, supreme wisdom and overall immortality.

Siddhars have an enormous amount of knowledge regarding chemicals, metals, minerals and plants which were successfully used by them for curing various disease.

The special features in Siddha system of medicine are Calcination of Mercury, Minerals, Metals & the preparation of a Supreme Salt Known as Muppu [a crown of Siddha] and rejunvenating the entire human system.

In Siddha system, Chemistry had been found developed into a science auxillary to MEDICINE(Vaidhiyam) and ALCHEMY(Vadham). It was found usefull in the preparation of medicine for curing all sorts of sufferings, Spiritual as well as corporeal & also in transmutation of baser Metals into Gold.

The siddhars school fully recognises that there are 96 tatwas and further believes that the human body is composed of 72000 naadi, 30000 nerves, 10 main artries ,10 vital airs (prana) all together in the form of a network. The normal functioning of human body depends on homeostasis of three forces or three humors called vadham,pitham,kabam. Any derangement in this homeostasis leads to pathological condition called Pini or Noi ,which is classified into 4448 in number. This well explain in the following verses from “Ishwara’s Meignana Naadi”

According to yugi vaithya chinthamani 800 vadha disease is of 80 types. uthira vadha suronitham is one among them. Day by day prevalence of vadha diseases increases due to environmental changes and life style modification of the human beings . Among arthritis , Rheumatoid arthritis scores more clinical importance because of its crippling nature. It affects not only the patients even their friends and neighbours physically, mentally and emotionally .

The symptoms of uthiravadhasuronitham is similar to that of Rheumatoid arthritis in morden aspect. Rheumatoid arthritis is an auto immune disease. It is common chronic inflammatory, destructive and deforming symmetrical polyarthritis associated with systemic involvement.The individuals with HLA D4 and HLA DR4 are more prone to RA. About 0.5% to 1% world population are prone to RA In India nearly 7million (0.75%) people are suffering from RA.

In Rheumatoid arthritis, various analgesic drug (NSAID) have been used .In failure of NSAID drug in advanced cases immune suppressive (DMARDS) drugs were used.Frequent usage of analgesic associated with adverse effect like gastric irritation, skin rashes, nausea , vomiting , epigastric pain, renal and hepatic dysfunction,blood dyscariasis,etc….

So the author tries to evaluate a Siddha herbo mineral formulation GANDHAGA RASAYANAM (INT) mentioned in ATHMA RATCHAMIRTHAM and NAVANATHA SIDDHA THYLAM (EXT) mentioned THERAN THAILAVARGA SURUKKAM for the treatment of UTHIRA VADHA SURONITHAM(RA).

AIM AND OBJECTIVES

AIM:

The principle aim of the present study is to evaluate the therapeutic efficacy of the siddha formulation "GANDHAGA RASAYANAM" (INT) and NAVANATHASITTHA THAILAM" (EXT) in the treatment of " UTHIRAVATHA SURONITHAM" (Rhematoid arthritis).

OBJECTIVE:

- Primary objective:

To analysis the safety therapeutic efficacy of Siddha drug GANDHAGA RASAYANAM" (INT) and NAVANATHASITTHA THAILAM" (EXT) in the treatment of " UTHIRAVATHA SURONITHAM" (Rheumatoid arthritis).

- Secondary objective:

To carryout a clinical trial with a precise proforma on identified patient with " UTHIRAVATHA SURONITHAM" (Rheumatoid arthritis).

To review the extend of equation of etiology, clinical features, signs and symptoms of UTHIRAVATHA SURONITHAM in siddha aspect with RA in morden medicine.

To analyse the disease uthiravatha suronitham according to the rational of udal thathu, paruva kalam, enn vagai thervu, neerkuri and nei kuri, age, sex, diet, family history, socio-economic condition.

To interpret altered tridosa or mukkutram and changes in the physiology as per siddha aspect.

To carryout comprehensive analysis to manifest the clinical efficacy of the drugs through the pharmacological and biochemical analysis.

To conduct clinical analysis on uthiravatha suronitham in both 20 inpatient and 20 outpatient department.

To diagnose the disease on the basis of modern parameters and Siddha diagnostic parameter.

To carryout bio-stastistical analysis of trial drug.

LITERATURE REVIEW

SIDDHA ASPECT

SIDDHA ASPECT

VATHAM:

Vatham governs all movement in the mind and body. It controls blood flow, elimination of waste, breathing and movement of thoughts across the mind.

Vatham derives from elements of space and air. Vatham is nothing but the energy of movement and the drive governing all biological activity. Vatha dosham is considered as the “king of the doshas”, since it maintains the body’s greater life force and helps in the movement of pittam and kabam.

This is well explained in following verses:

“nghwwhk iuahd Gi dnka au z fhf Fk

nghwwhk iuahd Gfy t njd nghwwhk

t s t ₍d₎Nyahf Fuk igk d d n d d k d d

t s t ₍d₎Nyahf Fk t s₍”.

- Njud¡ akfn t z¡gh

Vatham is considered as the king who rules the body [fort] and enables the wellbeing of the citizens [uyir].

The balanced vatham is active, creative and gifted with a natural ability to direct and enlighten.

SITES OF VATHAM:

According to vaidyachatakam, the sites of vatham are – umbilicus, rectum, faecal matter, abdomen, anus, bones, hip joints, navel, hair follicle, muscles and plexus.

“mwpejpLk thjklqFkyjjpdpy”

- -jpU%yH

“ehnkdwthjjJf fpUggplNkNfsha

ehgpfFf fnodWetpyyhFk”

- -A+fp

According to tirumoolar and yugi muni, the sites of vatham are the anus and the sub naval region.

TYPES AND FUNCTIONS OF VATHAM :

According to siddha classical texts the vatham is classified into 10 forms based on their location and function. They are:

- Praanan - life force / life air.
- Abaanan – regulates defaecation, micturition, ejaculation, etc
- Viyaanan – circulates the energy throughout the entire nervous system.
- Udhaanan – responsible for physiological reflex actions like vomiting, hiccup, cough, etc
- Samaanan – balances the other types of vatham
- Naagan – responsible for intelligence of an individual, winking, singing, and pilo-erection.
- Koorman – responsible for yawning, closing of mouth, winking, shedding of tears, vision and opening of eyes.

- Kirukaran- helps in digestion and medication. Produces cough and sneeze.
- Dhevathaathan – responsible for laziness , quarrelling , arguing
- Dhananjeyan – intracranial air.

INCASE OF UTHIRAVATHASURONITHAM :

- Abaanan - causes constipation
- Viyaanan – produces restricted joint movements
- Samaanan – due to de-arrangement of other vathas
- Kirukaran – produces loss of appetite
- Dhevathathan – insomnia.

Neha; jUk; top - AETIOLOGY :

I. According to YugiVaithyaSinthamani,

"v d dNt thjejhnd z gjhFk
k‰F j j‰Nyk d‰jHf S f nfaJkhW
g‰d dNt nghej i dNaNrhuQ nraJ
ngh‰NahHf s g‰uhk z iuj J}\ z‰j Jk
t d dNt t rnrhj j‰w NrhuQ nraJ
khjhg‰jhFU i tkweJNgHf Fk
f d dNtNt j j i je‰e i jnrajNgHf Fq
fhajj‰w fyej‰LNk thje jhNd".

"jhnd dwfrgNghL J tHgG iugG
rhjfkha k‰QRf‰DQ r ikjj t d dk
Mnd dwthw‰d Jnghr‰j j yhYk
Mfhj Njwy JFbj j yhYk
ghnd dwgf Ywf fk‰uht‰o‰gG
glbd‰Nak‰f TWj y ghunkaj y
Njnd dwnkho‰ahw Nkw r‰e i jahf‰y
r f f‰ukha thjkJnrd‰f Fe jhNd".

“M z hd tudwnd sNakj‰ahkhejH
mfj‰guNjr‰aHfl fddkahH
Nfhdhd Funkho‰iakwejNgHfs
nfhiyfsTnghafhkq Fw‰jjNgHfF
Cdhdrlejdd‰y thjk teJ
cwgt‰fFkNtjjj‰Yzikjhnd”.
A+f‰itj;j‰ar‰ejhkz‰

According to yugivaithiyachintamani, who are spending money in a reckless and foolish manner, neglecting or deserted the parents, cursing the holybooks, disrespecting the divine gifts, persons having deviltry mind and those with day slumber and staying back at night will get vatham disease.

ACCORDING TO PARARASASEKARAM:

njho‰y nghWifgGffhHj jyJtHjjy t‰QRf‰DQNrhWk
gioajhk tuFkwiwg igej‰idaUej‰dhYk
vo‰yngwg gfYwqf‰ ,ut‰d‰Ywqfhjhyk
kioe‰fHFoy‰dhNs thjqNfhg‰fFq fhNz.
fhzNtk‰fTz lhYq fUJgl bd‰t‰l lh
khdidahHfz Nkhfkwff‰Dk‰Fej‰llhYk
Mz tkyqflkikaqqNdt‰lhjjhYk
thDjd kley yhNs thjqNfhg‰fFq fhNz.
ghh‰d‰w gaggllhYk gyUld Nfhg‰j jhYk
fhnudf fUf‰Nahbf fOkuj Jujj‰zhYk
VHngWjdJneQr‰d k‰fjJffkilej‰llhYk
ghh‰afhww‰dhSkglh‰Dk thjq fhZk.
fhyqfz khw‰Azzq fhh‰aj jhYe jz zH
rhyNtaUej‰z YQ rej‰a‰YlfhHe jhYk
Nfhykhk Gs‰gGneaikf Fiwtwtuej‰dhYk
thythHKiyey yhNs thjKwgt‰fFq fhNz.

cwgtpj njOkg NghNjAaHGwj Jbiag gwwpj
njwgwf FileJNehTQ nraJNkyNehfFkhfpy
tpwnghypEjypdhNsNkypLq Fzqflkkpy
nrhwngWthjk NjhdWnkd wwpeJnfhsf
njhpeJKd nrhddtz zQ nraafhybiag gwwp
khejidg Nghwwpkphj JkwWNky NehfFkhfpy
mudwidj JjpahkhejuDrhpf fpdwNfhapy
rhpejpLq Foyha thjq FbGFQ rhwWq fhNy.

- ghuhrNrfukp

According to pararasasekaram, increased intake of grains, decreased intake of ghee and acrid acid, increased fear, increased anger, increased sadness, increased exposure to forcible flow of air, altered dietary timings will produce vatham diseases.

“fhdilahyr rjjhw fLkgrpahwNfhgjjhy
Cdkpyputpy thHjijAukngwtpiuffyhYhz
Mdgpd Kdpthy khUjLjjLj JiufFQ nrhyyhy
<dkpyporrpahd tpfythjNfhgq fhZk.”

- mqpfhjpghjkp

According to text angaathipatham, increased starvation and increased anger will produce disease of vatham.

OTHER FACTORS THAT INFLUENCE VATHAM:

1. DIETS :

“tspjUfha fpoqFtiutpyhjapyy Nfhio
Gspja pHNghd kpFfFKiwapyhTzbNfly
FspHjUtspapw Nwfq Fdpg GwTytyngzbH
FspjUKaffk ngwNwhHfbnray fUtpahky

- rghgjpifNaL

- Increased intake of tubers.
- Increased intake of chill foods
- Wandering in chill air
- Getting drenched in rain
- Living in hilly region
- Excessive sexual indulgence
- Hereditary

TASTES THAT MAY INCREASE THE VATHAKUTARM :

"njhopy ngWifgGf fhHjjy JtHjjy tpQRfpDQ NrhWk
gioajhk tuFkwiwg igejpidaUejpdhYk
vopy ngwggfYwqfp ,utpdpYwqfhjjhYk
kioepfhFoypdhNythjqNfhgpfFq fhNd"

- Afpitj;jparpe;jhkzp

increased intake of bitter taste, astringents, sour taste, increased intake of old cooked rice, intake of grains, day slumber and staying back at night causes vatha diseases.

2. HABITS :

"ntaapypy eilfifahYk kpfjjz zHFbfifahYk
nraapiokfspdiur NrHejDgtpfifahYk
igaNdcz ikahYk ghfwfha jpdifahYk
ijaNythjNuhfk rdpfFnkd wwpeJnfhsNs".

- NjiuaHthflk;

According to theraiyarvaakadam, excessive walking in hot sun, excessive intake of water, bitterguard and increased sexual indulgence, may play a role in disturbing the normal functions of vatham.

3. ENVIRONMENTAL FACTORS :

As per Siddha Maruthuvaanga Churukkam...

"gJkj ijgG+ff itfFk ghDk‰ff fhAk
KJNtd‰ y‰wG t‰weH KwWk - fJnkd
twWk fgk‰‡Fk thAk‰Fk thokhejf
Fwwey‰f Nfj‰njd NwhJ"

- r‰j¡j kUj¡J thq¡f RUf¡fk¡

According to siddha maruthuvaangachurukkam, in muthuvenilkaalam, the increased solar radiation increases the evaporation of water content from the body inturn produces increase in the kabam and vatham leading to formation of a disease.

B. As per YUGIVAITHYASINTHAMANI…

"thjtHj jdfhyNkNjhntddy
kUTf‰dwMd‰fwflkhjk
Mjidggr‰NahLfhHjj‰ifjddy
MlUNkkwwkhjqfs jddy
NghfNtr‰k‰ff‰dwfhykhFk"

- A+f‰r‰e¡jhk z‰

As per yugivaithyasinthamani, the incidence of vatha diseases will be more in the months from aani to karthigai[june – December].

UTHIRAVATHA SURONITHAM

NOMENCLATURE:

Uthiravathasuronitham= uthiravatha + suronitham

Uthiravatham = arthritis of rheumatic origin marked by severe pain and the formation of inflammatory nodules in the region of joints especially in the limbs of the body.(T.V.Sambasivam pillai).

Suronitham = blood and menstrual blood.

DEFINITION :

Uthiravathasuronitham is a type of arthritis of rheumatic origin. It is Characterized by pain, swelling, pricking sensation and restriction of movements due to de arranged vatham.

1. According to YUGIVAITHIYASINTHAMANI:

i t fpjkhaf fi z ffhYKoqfhy jhDk
kwflQ reJGwtbAk tqfpr
nrafpjkhw rpWtpuyfs kpfTk neheJ
rpeijjLkhwpNarypgG z lhFk
igfpjkhk gapjjpaj jpyyhjkpQrpg
ghukha cwgtpj JmoY z lhFk
cafpjkhk mrdkJjhDk Nt z lh
cjputhjRNuh z pjj J z hrrpahNk.

Characterized by pain and swelling in both ankle joints, knee joints and all smaller joints of the hand, feeling of tiredness, fever loss of appetite and mental depression. Also causes swan neck deformity and wasting of thenar muscle in rheumatoid arthritis.

2. According to PARA RASA SEKARAM:

gffKk khhGk $lggwwpNa ,OjJf nfhzL
neffpNakhhgpisjJNjhjha eukgpOjJ
xffNtrapjjpaqfs caheJld NkYk fhyk
kpfFNkcjputhjk vdwpJtpskgyhNk
- guuhrNrfuk

It is characterized by pain and tenderness of the axilla, breathlessness, pain in the upper limbs and the lower limbs.

SIDDHA PATHOLOGY

TRI-DOSHAM THEORY:

SYNONYMS: mukkuttram, muppini.

Tridosham is the principle or concept of tamil siddha medicine system. When these dosham are in de-arranged manner causes various types of diseases. These three dosham play vital role in deciding a person's physical and mental qualities. Vatham, pittam and kabam are formed by the combination of one or two mahabhootas:

Vatham - ether + air

Pittam – agni

Kabam – water + earth

Normal ratio of vatham, pittam,kabam is 1 : ½ : 1/4. The ethics and attitude of siddha system says that human body is the replica of the universe.

In uthiravathasuronitham the vatham is in increased manner. The increased vathakuttram causes vitiation of other two kuttrams[pittam and kabam], which inturn results in the manifestation of a disease.

DISEASE:

A disease is a particular abnormal condition, a disorder of a structure or function, that affects a part or all of an organism.The study of a disease is known as pathology.

SYNONYMS: sickness, distemper, suffering, affliction, distress of mind.

THE CHARATERISTIC FEATURE OF A DISEASE:

Disease can be classified into two kinds. They are :

- Pertaining to the mind.
- Pertaining to the body according to the variation of the three humors.

DIAGNOSIS

"NehaehbNehaK j dhbaJ j z ⁄f Fk
thaehb thaggr nray"
j⁄U f Fws

According to thiruvalluvar , in thirukural explains the importance of diagnosis as it is to be made inorder of the aetiology, root cause of the disease thereby treating the disease with appropriate medicine.

PINIYARI MURAIGAL [METHODS OF DIAGNOSIS] :

Mainly depends upon the three principles. They are:

- Poriyalarithal [inspection]
- Pulanalarithal [palpation]
- Vinaathalarithal [interrogation]

1. **PORIYALARITHAL:**

Poriyalarithal is nothing but examining the patient by direct perception. Pori is considered as the " five sense organs" of perception. They are namely :

- Mei [skin]
- Vai [tongue]
- Kan [eye]
- Mookku [nose]
- Sevi [ear]

2. **PULANALARITHAL:**

pulanalarithal is examination of the patient by using senses. They are :

- Smell
- Taste
- Vision
- Sensation of touch [palpation]
- Hearing

3.**VINAATHALARITHAL:**

Vinaathal is collecting information regarding the history of disease, its symptoms, etc, from the patient.

DIAGNOSTIC METHODOLOGY IN SIDDHA SYSTEM OF MEDICINE:

1. **ENVAGAI THERVUGAL [EIGHT DIAGNOSTIC TOOLS]:**

These methods not only help in the diagnosis but also helps to detect the prognosis of the disease and for convincing the patient and to be informed about the nature of disease. They are:

- Naadi [pulse]
- Sparisam [sensation to touch]
- Naa [tongue]
- Niram[color]
- Mozhi [voice]
- Vizhi [eyes]
- Malam [faeces]
- Moothiram [urine]

ehb]ghpr k ehepwk nkhopt opkyk %j jpukpi tkUj J tuhAjk.

- Neha ehly Neha Kjy ehly (Kjy ghfk)

"nkaf Fwpepwk njhdpt opeh ,Ukyk i ff Fwp"

- Njiuah

- **NAADI [PULSE] :**

Naadi is defined as the pulse wave as felt on the radial artery, one inch from the wrist by means of palpation with the tip of index, middle and ring finger corresponds to vatham,pitham and kabam. They normally exsist in the ratio 1 :

½ : ¼ respectively. Naadi is the first and foremost diagnostic parameter of the siddhars. The commonly seen naadi in uthiravadhasuronitham are:

- Vathapitham
- Pithavatham
- Vathakabam

In uthiravathasuronitham, vatha is increased, followed by an increase in other two kutrams ie.,pitham and kabam.

jpUjjkhk thjjNjhNljq nfhLgpjjQ Nrhpy
nghUjJfs NjhWk nehe J
- Fz thflk Nehapd rhuk
fhzgghthjkwpy
fhy iffs nghUjJNehFk
- fhtpaehb
thjjjpd Fz Nknjd dpy
tapwJnghUkpnfhs Sk
jhjjjpd Nkdp if fhy
reJNkfLgGj NjhdWk"
- Fwpailahsehb.

- **SPARISAM [TOUCH] :**

The examination regarding skin is made by inspection and palpation. It declare about the warmth / chillness, dry / weeping skin , rough / smooth , soft / hard , tenderness, presence of ulcers, fissures, swelling, wrinkles, etc.

In uthiravathasuronitham mild warmth is felt over the affected joints with swelling, tenderness and subcutaneous nodules and the degree of warmth may vary from one another depending on the severity of disease.

- **NAA [TONGUE]:**

The colour, character and condition of tongue are noted. In uthiravathasuronitham tongue commonly does not show any abnormality. In case with anaemia it may appear pallor, glossy and coated.

- **NIRAM [COLOUR]:**

Signs of different complexions in vatham, pittam, kabam and thontha thegis, cyanosis, pallor, yellowish discolouration may be noted.

In uthiravathasuronitham no abnormalities are seen normally. Sometimes pallor of skin may be noted incase of anaemia and redness seen in inflamed joints.

- **MOZHI [VOICE] :**

It constitutes high, low-pitched voice, nasal speech, hoarseness of voice, slurring and incoherent speech etc.In uthiravathasuronitham no abnormalities are seen normally.

- **VIZHI [EYES]:**

Both motor and sensory disturbance of eye are noticed. Redness of eyes, paleness, excessive lacrimation, swelling, corneal ulcers, sunken eyes may be noted. In uthiravathasuronitham no abnormalities are seen normally. In anaemic patients pale conjunctiva may be noted.

- **MALAM [FAECES]:**

  - Vatham: black coloured stools along with constipation.
  - Pitham : loose stools with yellowish red color
  - Kabam : white coloured stools with mucous

- Thontha : stools contains some of the features of two thodams.

  Constipation was reported in some case of uthiravathasuronitham.

- **MOOTHIRAM [URINE]:**

Neerkuri and neikuri[oil on urine sign] are special diagnostic methods regarding urine [moothiram].

NEERKURI[PHYSICAL EXAMINATION OF URINE]:

jpUjjkhk thjjNjhNljq nfhLgpjjQ Nrhpy
nghUjJfs NjhWk nehe J
- Fz thflk Nehapd rhuk
fhzgghthjkwpy
fhy iffs nghUjJNehFk
- fhtpaehb
thjjjpd Fz Nknjddpy
tapwJnghUkpnfhs Sk
jhjjjpd Nkdp if fhy
reJNkfLgGj NjhdWk"
- Fwpailahsehb.

The urine is collected and examined for the following:

- Niram–colour
- Edai – specific gravity
- Manam – smell
- Nurai – frothy nature
- Enjal – deposits / quantity of urine voided.

In uthiravathasuronitham straw or hay coloured urine is noticed in neerkuri.

NEIKURI [OIL ON URINE SIGN] :

In uthiravathasuronitham the patterns of neikuri is “aravenaneendathuvatham”. In some cases the oil drop remain as that of a pearl or ring indicating kabaneer or pithaneer accordingly.

1. THINAI:

There are five thinai [the land].

S.NO	THINAI	AFFECTED HUMORS
1	Kurinchi	Kabam
2	Mullai	Pitham
3	Marutham	All 3 humors are in equilibrium
4	Neithal	Vatham
5	Palai	All 3 humors are affected.

NEITHAL :

neaj d‰y Nt Y tHg i geq fh Jw‰D k J
n t aj d‰yNk j qF t lhFk - nehaj d
kUqF l i yK f fhf f‰t y YWg i g t f Fk
fUqF l i y f fo‰wf Fq fh z
- gjhHj j F z r‰ejhk z‰

In neithal [costal area] vatham is being more predominant, and since uthiravathasuronitham being a vatham predominant disease seem as to occur more in neithalnilam. It is being worsened in palainilam and increased in marutham nilam.

2. KAALAM:

Generally a year is divided into 6 months called as perumpozhuthu and a day into 6 segments called as sirupozhuthu during ancient period.

PERUMPOZHUTHU:

s.no	season	Months	Kuttram
1	Kaarkaalam	August 16 – October 15	Vatham ↑↑ Pitham ↑
2	Koothirkaalam	October 16-December 15	Vatham [-] Pitham ↑
3	Munpanikaalam	December 16-feburary 15	Pitham [-]
4	Pinpanikaalam	Feburary 16- april 15	Kabam ↑
5	Elavenirkaalam	April 16 – june 15	Kabam ↑↑
6	Mudhuvenirkaalam	June 16 – august 15	Vatham ↑ Kabam [-]

↑ - Thannilaivalarchi

↑↑ - vetrunilaivalarchi

[-] – thannilaiadaithal

Uthiravathasuronitham may occur in kaarkaalam and it may get worsen badly in muthuvenilkaalam.

SIRUPOZHUTHU:

A day is divided into 6 yamas. They are:

- Maalai [evening]
- Idaiyammam [midnight]
- Vaikarai [dawn]
- Kaalai [morning]
- Nannpakal [noon]

- Erpaddu [afternoon]

- uthiravathasuronitham may worsen in vaikarai and kaalai [morning stiffness].
- Maalai [evening] – manifested with fever
- Nannpakal and erpaadu – subside slightly.

MUKKUTRAM

Synonyms: Tridosham ,muppini

Tridosham is the principle or concept of tamil siddha medicine system. When these doshas are in de-arranged manner causes various types of diseases. These three doshas play a vital role in deciding a person's physical and mental qualities. vatham ,pittam and kabam are formed by the combination of one or two mahabhootas. They are

- Vatham – ether + air
- Pittam – agni
- Kabam – water + earth

Normal ratio of vatham, pittam and kabam is 1: ½ : ¼. The ethics and attitude of siddha system medicine says that human body is the replica of the universe.

VATHAM:

Vatham governs all movement in the mind and body. It controls blood flow, elimination of waste, breathing and movement of thoughts across the mind. Vatham derives from elements of space and air. Vatham is nothing but the energy of movement and the drive governing all biological activity. Vatham is considered as the "king of the doshas", since it maintains the body's greater life force and helps in the movement of pittam and kabamdosham. Vatham is considered as the king who rules the body [fort] and enables the well-being of the citizens [uyir].

SITES OF VATHAM:

According to vaidyachatakam, the sites of vatham are: umbilicus, rectum, faecal matters, abdomen, anus, bones, hip joints, skin, navel, plexus, hair follicles and muscles.According to saint tirumoolar and yugi muni, the sites of vatham are : anus and below the navel region.

TYPES OF VATHAM:

According to siddha classical texts, the vatham is classified into 10 types based on their location and function. They are :

- Praanan
- Abaanan
- Viyaanan
- Samaanan
- Naagan
- Koorman
- Kirukaran
- Dhevathathan
- Dhananjeyan

FUNCTIONS OF VATHAM:

Functions of vatham are as follows:

- Responsible for respiration.
- Regulates defaecation, micturition, ejaculation, etc
- Responsible for natural physiological reflexes like vomiting, sneezing, hiccup, cough, etc.
- Helps in digestion and medication.
- To strengthen five sense organs.

- To activate body, mind and intellect.

IN CASE OF UTHIRAVATHASURONITHAM:

The following types of vatham are being affected. They are:

- Abaanam – causes constipation
- Viyaanam – produces restricted movements
- Samaanan - affected due to the derangements of four Vatham humour
- Kirukaran – produces loss of appetite
- Dhevathathan – insomnia.

PITHAM:

The pittam is considered as bio energy fire.

SITES OF PITTAM:

According to vaidyasathagam, the sites of pittam are- urinary bladder, stomach and heart. Umbilicus, epigastric region, sweat, saliva, blood, essence of food, eyes etc are also considered as the sites of pittam.

According to yugi muni, the sites of pittam are urine, region below the neck region.

TYPES AND FUNCTIONS OF PITTAM:

There are 5 types of pittam. They are:

- Analapittam – considered as fire of pittam.
- Ranjagapittam – haematinic fire
- Saathagapittam – fire of achievement
- Prasakapittam – fire of brightness
- Alosagapittam – fire of vision.

INCASE OF UTHIRAVATHASURONITHAM:

- Analapittam – causes loss of appetite

- Ranjagapittam – pallor due to Hb
- Saathagapittam – difficulty in walking, climbing upstairs, squatting.
- Prasakapittam – skin pallor.

KABAM:

Kabam is considered as the bio-energy water. Synonym of kabam is iyyam.

SITES OF KABAM:

The sites of kabam are head, tongue, eyes, nose, throat, thorax, bone, bone marrow, joints, blood, fat, sperm and colon.

TYPES AND FUNCTIONS OF KABAM:

- Avalambagam – nodal
- Kiletahgam – digestive
- Pothagam – taste
- Tharpagam – coolant
- Santhigam - articulant

INCASE OF UTHIRAVATHASURONITHAM:

- Kilethagam – loss of appetite
- Santhigam – restricted movements of joints

UDAL KATTUGAL:

Udalkattugal is nothing but the seven physical constituents of the body. They are:

- **Saaram–** gives physical and mental immovability.
- **Senneer** – admits colour to the body and nourishes the body.
- **Oon**– gives shape to the body according to the physical activity
- **Kozhuppu**– anoints the joints and other parts of the body for smooth functioning.
- **Enbu**– supports the body frame and responsible for the postures and movements of the body.

- **Moolai**– involves the medulla of the bones and gives strength and softness to them.
- **Sukkilam / suronitham**– responsible for reproduction.

Incase of uthiravathasuronithamsaaram, seneer, oon, kozhuppu, enbu and moolai are mainly affected.

SAARAM:

- Increased vascular congestion.
- Aggression of synovial layers by polymorphs, lymphocytes, plasma cells.
- Thickening of capsular structure.
- Villous formation of synovium
- Cell-rich effusion into joints and tendon sheaths.
- Generation of synoviocytes.

SENNEER :

- RBC and WBC abnormalities
- Increased ESR
- Decreased haemoglobin
- Increased lymphocytes
- Increased IgG antibody
- Increased HLA-DR4

OON :

- Tenosynovitis
- Swelling
- Invasion of collagen bundles
- Partial or complete rupture of tendons

KOZHUPPU:

- Attacks the synovial membrane surrounding the lubricating fluid in the joints.
- Morning stiffness occurs in affected knee joints.
- Loss of sufficient lubrication that produces friction in between the bones of joints.

ENBU :

- Pain occurring in affected knee joint, crepitation present.
- Bone is eroded by granulation tissue invasion and osteoclasticresorption

MOOLAI : Anaemia

DIFFERENTIAL DIAGNOSIS

UthiravathaSuronitham is differentiated from other types of VathaSuronitham as follows:

thjRNuh z pjk;

“mwpejpl lmq fnky yhnky pTkhf p

mirthdj t tplqfs tffkhf p

ewpejpl leil nfhlhjhd pUjjy

ey pahf pnkho pnkho pa tffkhfr

nrhwpejplNlNj fnkqFkirTfhzy

Nrhww pd Nkd pid t pdwpj J}ffkhjy

twpejpll thaj d pdHjh D}wy

thjRNuh z pjejhDk tFjj thNw”.

VATHA SURONITHAM

- Emaciation.
- Swelling of joints.

- Restricted movements.
- Joint pain.
- Discomfort.
- Excessive salivation.
- Loss of appetite.

rpj;Jthjrnuhzpjk;

"thwhdrhunkyyhEioeJCjy

khrwwNjhyjhDe jpiueJNghFk

ehwhdehWNghyeukGRfFk

ehffjjhd totojJf Nfhioahfk

E}whdneUgGjjhd gllhw Nghy

neheJNkrlnkyyhk nfhggspfFk

twhdThpeJgpdidntJkgptqFk

kpffrpj JthjRNuhzpjkjhNk".

SITHUVATHA SURONITHAM

- Anasarca.
- Wrinkles.
- Neural pain.
- Glossy tongue.
- Sialorrhoea.
- Bullous eruption as in burn.
- Exfoliation, swelling andWarmthness.

gapj;jpathjRNuhzpjk;

"czHrrpaha RNuhzpjejhd kpfnt Jkgp

Cffkhaj NjfnkqF kpfNt neheJ

KzHrrpaha Koqfhyfs Koqif nahff

Kidahd rpWtpuyfs fddk newwp

jzHrrpaha reJrU thqf nkqFk
jh\bfkhaf FileJ RuK Kzlhk
gzHrrpahag ghzlJNghy Nkdp ahFk
gapjjpa thjRNuhzpjjjpd gzG jhNd".

PAITHIYA VATHA SURONITHAM

- Hyperaemia.
- Tenderness in knee, elbow and smaller joints.
- Poly arthralgia.
- Pyrexia.
- Anaemia.

Nrj;Jk thjRNuhzpk;

"gz ghf TlyFspHeJ VW tqfpg
gijgghd tplenjhllhw ghu Nehthk
jpzghd rpuRnewwp Nehffh Lzlhk
rpNylL kkhafNfhio nahLR thrkhFk
kzghf kaff nkhL fdT Kzlhk
thatuz L Urpapyyh tUjj khFk
ezghf ehbANk gl glfFk
ewNrlg RNuhzpjkhk ehLq fhNy".

SLETHUMAVATHA SURONITHAM

- Chillness with abdominal distension.
- Severe pain and Head ache.
- Syncope and Hallucination.
- Dryness of mouth and Anorexia.
- Tachycardia.

cjuthjRNuhzpjk;

"ehLNk RuktеJ eLff Yzlhk
ehtuz L jiyneheJ clkg Ojjp

thLNk Njfnkyyh kdprrg G+gNghy
kfhtUjj Kz lhfpkaff khFk
rhLNk abffbjhd Ngjp jhDk
jtpfFNk jz zHjh dhll khfpj
NjLNk Nrhwwpdnky epidT jhDk
nraTju thjRNuhzp jejhnd dNd".

UTHARAVATHA SURONITHAM

- Fever with rigor.
- Dryness of mouth.
- Pain in all over the joints.
- Headache.
- Diarrhoea.
- Excessive thirst.
- Hunger.

itfpjthjk;

"Mnkdw tqfpdNjhH tpljjpy ujjk
mOjjkhaj jpuz LNk vqFk ghaeJ
Xnkdw XlbNajpuz b UfFk
cWjpahaj njhlLlNd nkjnjd whFk
Njnkdw Njfnkqf ZKRfFk
rwpa NjhhpUknyhL fhrr Yz lhk
ghnkdw glejdpNy jpkpUz lhFk
ghukha itfpjkhk thje jhNd".

- A+fp itjjpa rpejhkzp

UthiravathaSuronitham is differentiated from other types of VathaSuronitham as follows:

VAIKITHA VATHA SURONITHAM

- Swelling with hyperaemia.
- Soft on touch.
- Cough with pyrexia.

- Irritability.

LINE OF TREATMENT IN SIDDHA SYSTEM OF MEDICINE:

- In siddha system of medicine,the treatment is based on following strategy as follows
- Kaapu(prevention)
- Neekam(curing)
- Niraivu(restoration)

KAAPU(PREVENTION):

"எதிரதாக் காக்கும் அறிவினார்க் கில்லை
அதிர வருவதாம் நோய்"

- திருக்குறள், எண் 429

Its goal is to protect, protect and maintain health and well being and to prevent disease, disability and death. Preventive measures were classified into two types as follows

- Nithiya ozhukkam
- Kaala ozhukkam

முக்கால் மலமது பொல்லாத வாய்வு மூன்று தும்மல்
சிககா மலாறு சலதாரை விடடுச சுறுநடையும
மைக்காடு கொண்டா விழியாய் மனிதர்க்கு வாய்ப்பதெனில்
எக்கால மும்பிணி வாராத காயம் இரும்பொக்குமே"

- சித்த மருத்துவாங்கச் சுருக்கம், பக்கம் - 192

NITHIYA OZHUKKAM means daily routine which we do in day to day cycle such as

- Morning wake up
- Bath
- Diet
- Sleep.

KAALA OZHUKKAM means things which are carryout according to the seasonal variation for healthy living.

In siddha system of medicine prevention very well priorlized.

NEEKAM:

The treatment in SIDDHA SYSTEM OF MEDICINE is followed on the basis of PANCHA BOOTHA THEORY such as MUKKUTTRAM-ARUSUVAI.

The relationship between PANCHA BOOTHAM,MUKKUTTRAM AND ARUSUVAI is described in the following table:

MUKKUTRAM	PANCHA BOOTHA KOOTU
Vatham	Vin+vaayu
Pitham	Neruppu
Kabam	Man+neer

ARUSUVAI	**PANCHA BOOTHA KOOTU**
Inippu	Man+Neer
Pulippu	Man+Neruppu
Thuvarppu	Man+Neer
Uvarppu	Neruppi+Neer
Kaarpu	Neruppu+Vaayu
Kaippu	Vaayu+Vin

From the above table,we can conclude the following points:

- The Inippu(sweet),Pulippu(sour),Uppu(salt) decrease the vatha kutram.
- The Kasappu(Bitter),Inippu(Sweet),Thuvarppu(Astringent) decreases the pitha kutram,
- The Karppu(purgent),Kasappu(bitter),Thuvarppu(astringent) decreases the kaba kutram,

The physician will treat the diseases by normalizing the deranged uyirthathu.So the treatment is based on:

- To bring the mukkutram to balanced state.
- Treat the disease according to the symptoms,
- To intensify the natural immunity.

"உற்றவன் தீர்ப்பான் மருந்துழைச் செல்வானென்று
அப்பானாற் கூற்றே மருந்து"

- திருக்குறள், எண் 950

NIRAIVU:

Life style modification was advised to the patients about the awareness of diet,season,emotional influence based on disease state.

MANAGEMENT OF UTHIRAVATHASURONITHAM:

Among the 80 vatha disease,uthiravathasuronitham is one among them.For vatha diseases,PURGATION is given to stabilize them.

10ml Vellai ennai is given in early morning, on the very first day of treatment for purgation.

The second day,patient is advised to take rest on that full day.

From the third day onwards,patient is advised to take the trial drug.

TRIAL DRUG:

INTERNAL MEDICINE :

GANDHAGA RASAYANAM:

Reference : AthmaratchamirthamVaithyasarasangraham,pg no:438

Dose :500mg, twice a day.

Adjuvant : Hotwater

Duration : 48days

EXTERNAL MEDICINE :

NAVANATHASITTHA THAILAM:

Reference : Theren thaila varga surukkam (Pg.No:133)

Dose : 25ml for external use.

PATHIYAM:

Siddha system of medicine have specific diet regimen based on disease affected and body constitution of the patients. Diet plays major role in enhancing curing capacity of medicine.

“gjjpajjpdhNy gyd cz lhFk kUeJ
gjjpaqfs Nghdhy gyd NghFk
gjjpaNk ntwwp jUkgz bjHfF Mjypdhy
gjjpaNk cjjpnadW ghH”

- Njud ntz gh

During the course of treatment, the patients were advised to follow certain diet regimen (Icha pathiyam) which is mentioned for vatha diseases.

1.	Kadugu	-	Brassica nigra (Mustard seed)
2.	Ell Nei	-	Gingelly oil
3.	Poosanikkai	-	Bennicasa hispida
4.	Kadalai	-	Arachis hypogea

5.	Thengai	-	Coccus nucifera
6.	Mangai	-	Mangifera indica
7.	Poondu	-	Allium sativum
8.	Pala	-	Artocarpus heterophyllus
9.	Kollu	-	Horse gram
10.	Pugaiyilai	-	Nicotiana tobaccum
11.	Pagal	-	Momordica charantia
12.	Agathi	-	Sesbania grandiflora
13.	Sour taste		
14.	Astringent taste		

SUBSTANCES USED FOR NEUTRALIZING THREE HUMOURS ARE:

“x dwpa thjgpjj fgkpi t Aauh t z z k

edwW fwp fnsyyhk ehSNk r ikgguhaNjhH

jpdwpL kpsF kQrs ruf KaHej fhak

nt dwp nfhs RfNfhNlyk ntejpak c s spNrHNj”

- g.F.rp

TO MAINTAIN THREE VITAL HUMOURS IN EQUILIBRIUM ONE SHOULD TAKE FOOD COOKED WITH

Pepper	-	Piper nigram
Turmeric	-	Curcuma longa
Cumin seeds	-	Cuminum cyminum
Asafoetida	-	Ferula asafoetida

Dry ginger - Zingiber officinale

Cardamom - Elettaria cardamom

Fenugreek - Trigonella foneum

Garlic - Allium sativum

SUBSTANCES ADVISED FOR VATHA DISEASES ARE :

"nrqfOeH Nfhil j Njd kpsF eyny z i z

jqF ngUq fhaj jOjhio - vqnfqFk

flL rpW Kj J nea Nfhjpy c SeJ i t fs

thlL k z py f i f kjp"

- g.F.rp

- Honey collected during summer
- Pepper - Piper nigram
- Gingelly oil - Sesamum indicum
- Asafoetida - Ferula asafoetida
- Castor oil - Riccinus communis
- Black gram - Vigna mungo
- Garlic - Allium sativum

NrHf;ff; $ba c z Tfs;: (Diet to be included)

fha;fs; (Vegetables):

- fj jhpggpQR - Unripe brinjal
- KUq i fg gpQR - Unripe drumstick

- mtiugg‰QR - Unripe broadbeans

fliufs((Greens):

- nghddhqfz z‰ - Alternanthera sessilis
- %ff‰ulil - Boerhaavia diffusa
- JhJNtis - Solanum trilobatum
- KUqifffiu - Moringa oleifera
- fw‰Ntgg‰iy - Murraya koenigii
- KlffWjjhd - Cardiospermum halicacabum
- mWfiu - Amaranthus tristis
- fh‰rhiy - Eclipta prostrate

goq¡fs((Fruits):

- khJis - Pomegranate
- Mgg‰s - Apple
- gggghs‰ - Papaya
- MuQR - Orange
- Nghrir - Dates
- mjj‰ - Figs
- ehty - Syzygium cumini

mirtk((Non-Vegetarian diet):

- ntsshlLffw‰ -Meat
- fhil - Quail
- r‰W ,whykd -Prawn

MODERN ASPECT

RHEUMATOID ARTHRITIS:

HISTORY:

AB Garrod in 1858 named the disease rheumatoid arthritis replacing the old terms arthritis deformans and rheumatic gout. He is thus credited to make a distinction between rheumatoid arthritis and OA and gout.

Appearance of rheumatoid arthritis affected joints was first described by Bannatyne 1896. It was in 1940 that Camroe coined the term rhematologist and the term rheumatology was coined by Hollander in 1949.

Webresults:Rheumatoid arthritis history.

By Dr.Ananya mandal MD

www.news-medical.net

GENERAL CONSIDERATION:

Rheumatoid arthritis [RA] is one of the most common chronic inflammatory arthritis affecting 0.5-1.0% of the general population world wide. Epidemiology surveysby **WHO-COPCORD**[world health organization community oriented program for control of rheumatic diseases] shows a prevalence of 0.45% in urban india and 0.7% in rural population. RA in india is predominantly with arthritic manifestations with lower frequency of extra articular features and rheumatic nodules. The frequency of positive rheumatoid factor [RF] varies from45% in rural community to 80% in the hospital setting. The frequency of antibody to **anti cyclic citrullinated peptide**[anti- CCP] positivity in this survey varies from 59-100%. RA in the Indian rural sitting is much more disabiling and is related to work conditions and methods

and popular. Indian customs of squatting and sitting cross legged in floor. The disease is 3 times more common in women than men with a peak incidence in 3rd and 4th decades.

ETIOLOGY :

RA is multifactorial in its etiology consisting of genetic and environmental factors. Interaction of these factors cause altered post- transcriptional regulation and self- protein citrullination leading to loss of self-tolerance.

GENETIC FACTORS:

Overall the contribution of genetic factors is to the order of 10-15%. The strongest genetic association is with the class II **major histocompatibility complex** [MHC] gene containing the susceptibility epitope [SE] which is a specific 5 amino acid sequence in the hyper variable region of human leukocyte antigen [HLA]- DR4 presence of SE causes a 4-5 fold increase of risk of developing RA. Recently other genes like PTPN, PADI,are also found to increase the risk of RA by two fold , suggesting that the genetic association of RA are complex and may involve many genes.

Environmental factors:

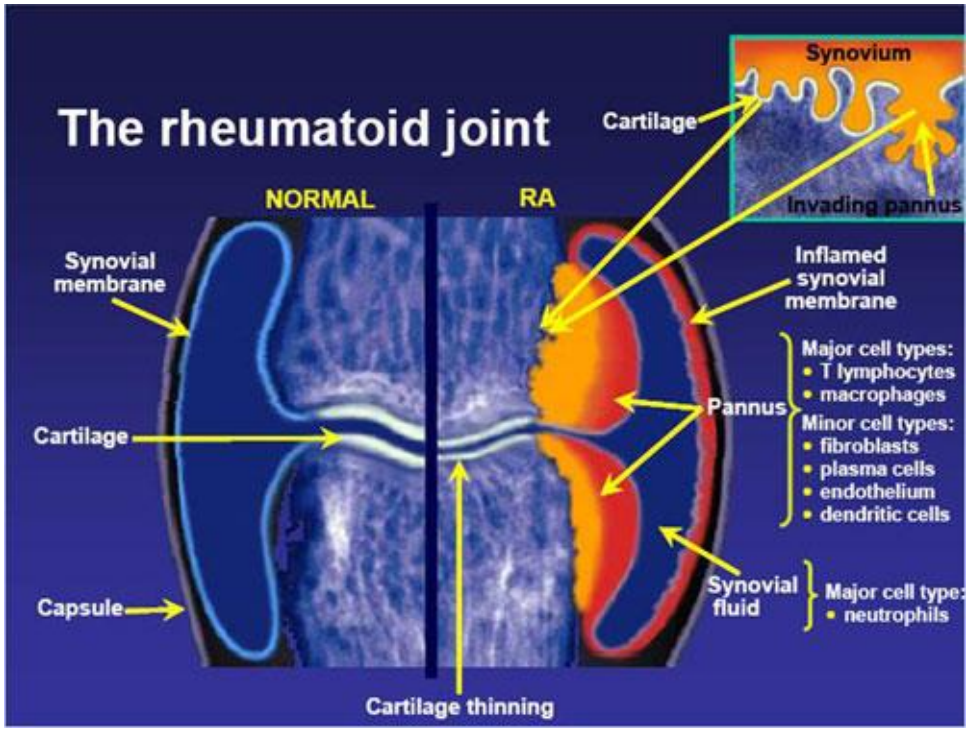
Many environmental triggers like smoking, infection, chronic gingival disease, diet and hormonal factors can precipitate RA in genetically susceptible persons.

1. **SMOKING** is a strong stimulus for protein citrullination and generation of anti CCP antibodies. The SE has increased ability to bind to citrullinated protein. A smoker with two copies of HLA-SE has 40 fold chance of developing RA than a non smoker without HLA-SE.
2. **INFECTIONS** by viruses like Epstein barrvirus, parvovirus and chickungunya virus can act as a triggering agent to develop RA. Chronic peri-odonitis is found to be risk factor for RA as the bacteria

porphyromonasgingivalis, commonly associated with this disease stimulate protein citullination and development of auto-antibodies of RA.

3.HORMONAL FACTORS:

Breast feeding increases the risk of RA due to the surge of pro-inflammatory hormone prolactin. Nulliparity also found to increase the risk of RA.



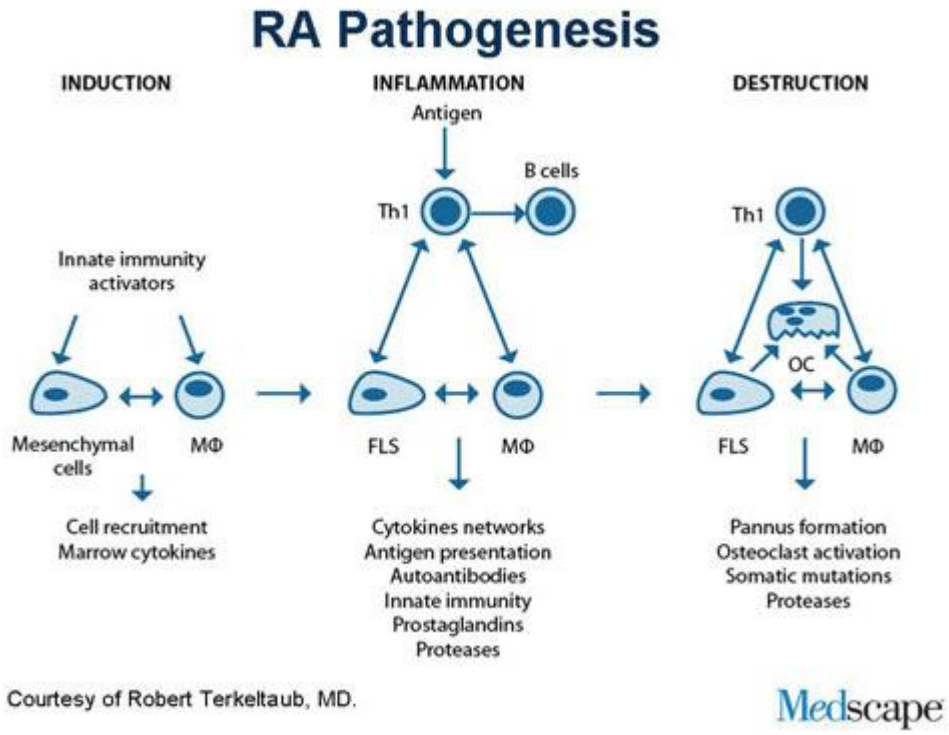
PATHOLOGY:

RA is an auto immune disease of unknown etiology. It evolves through a multistep pathogenic process starting with break in self- tolerance with production of antibodies to anti-CCP. There is increased production of proinflammatory cytokines like tumor necrosis factor- alpha [TNF-α], interleukin-1 [II,-I] , interleukins-6 [II,6] etc, which leads to influx of immune cells into the synovial compartment. This process results in synovial cell proliferation and angiogenesis which leads into the formation of pannus.

The pannus consists of fibroblasts like synoviocytes mixed with macrophages surrounding newly formed blood vessels, enzymes like proteases and elastases

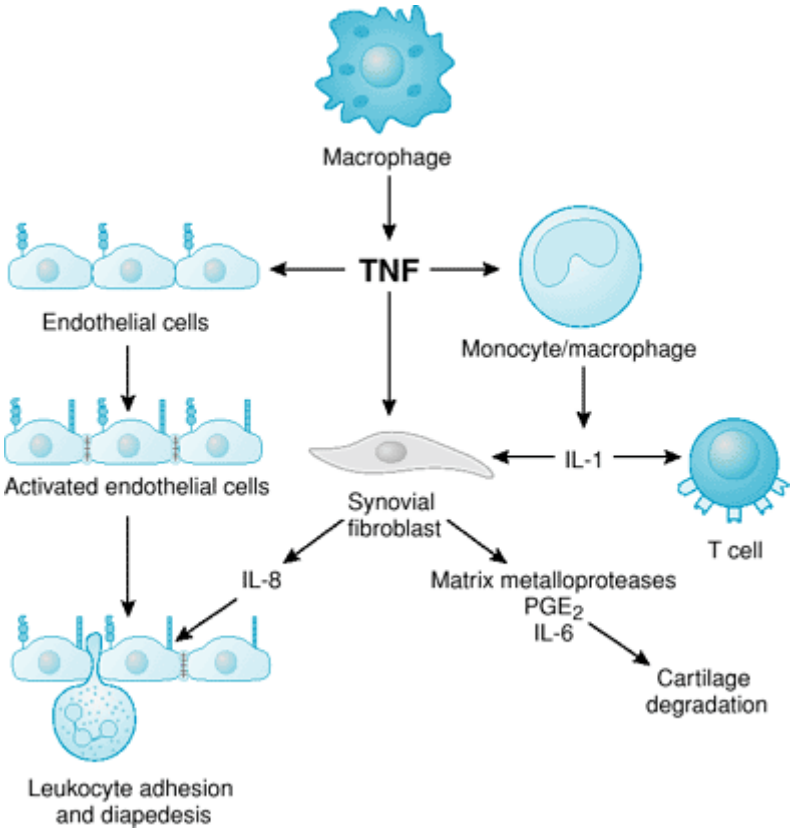
released by the cells in the pannus, cause cartilage erosion. The pro- inflammatory cytokines like TNF-α, II-I, II-6, activate the osteoclast causing bone erosions.

The articular cartilage is eventually destroyed with loss of joint space. Fibrosis develops across the joint space to produce ankylosis. The joint is deformed and secondary degenerative changes develop. Infection may supervene in these joints to convert them into septicarthritis.



EXTRA-ARTICULAR LESIONS:

Other tissues are affected to varying degrees. Basic pathology is the same as in the synovium. Lesions are seen in the skin, lungs, heart, liver, nervous system and eyes. The small blood vessels may be affected. They show intimal hyperplasia, perivascular round cell infiltration and occasionally necrotizing panarteritis. Subcutaneous nodules consist of a central area of fibrinoid necrosis surrounded by mono nuclear cells arranged in a palisade manner.

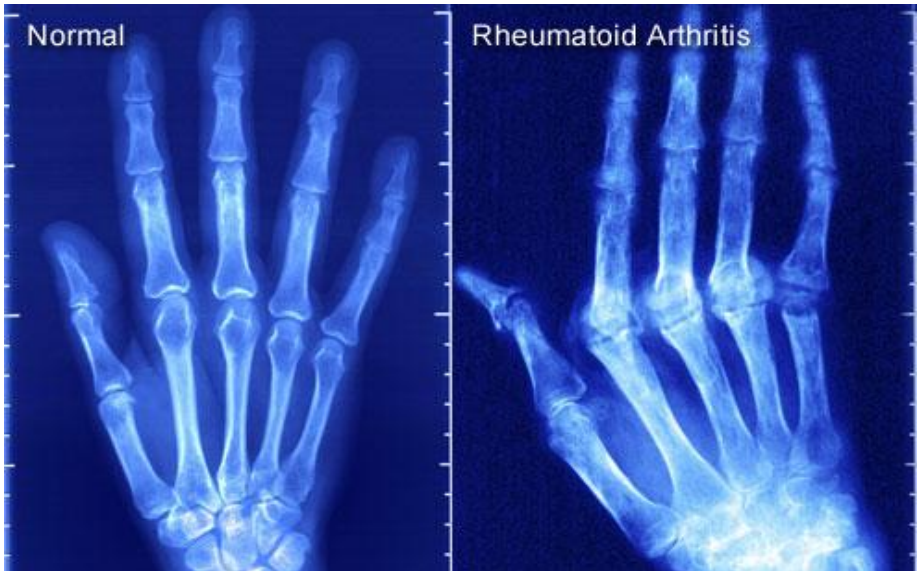


CLINICAL FEATURES:

Females are more prone than males in a ratio of 3:1. The disease is more common in the 4^{th} and 5^{th} decades. The disease passes through different stages:

- Onset to 6 months- early RA.
- 6months to 2 years – established RA.
- Above 2 years – advanced RA.

Early symptoms are nonspecific and they include undue fatigability, weight loss, poor appetite, transient myalgias and parasthesia.



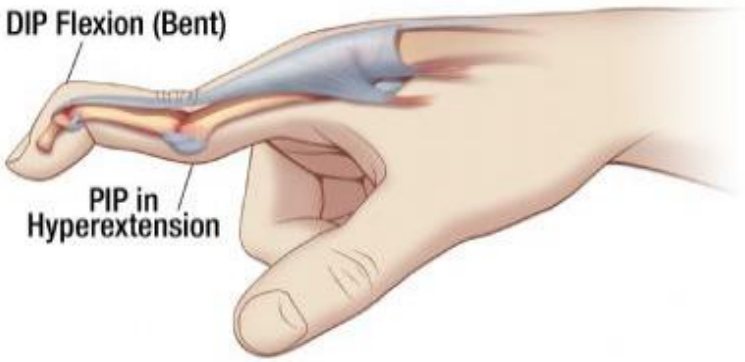
ARTICULAR INVOLVEMENT:

The onset is generally insidious and the disease presents as a chronic symmetrical polyarthritis. Less common presentation include:

- Acute polyarthritis
- Oligo arthritis
- Acute monoarticular arthritis
- Chronic monoarticular arthritis
- Systemic disease with fever, sweating, leukocytosis and pleural effusion in addition to arthritis.

Any diarthrodial joint may be inflamed. Arthralgia, arthritis, muscle wasting, tendonitis, tendon rupture and deformities constitute the main lesions. The affected joints are warm, painful and swollen. Movements are restricted, especially in the morning after sleep [morning stiffness] and after the periods of resting. Classic findings are seen in the joints of the hands and feet, metacarpophalangeal [MCP], metatarsophalangeal [MTP] and proximal interphalangeal [PIP] joints are inflamed most frequently. Wasting of the small muscles of hand may develop due to disuse and direct muscle involvement.

Swan Neck Deformity

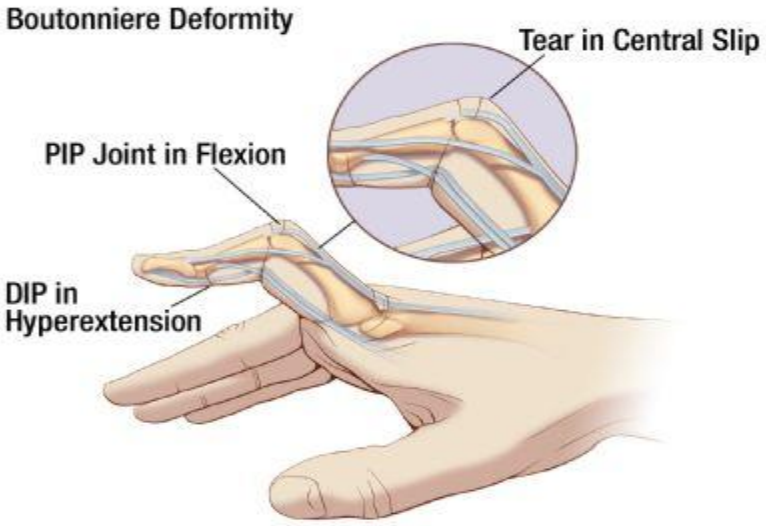


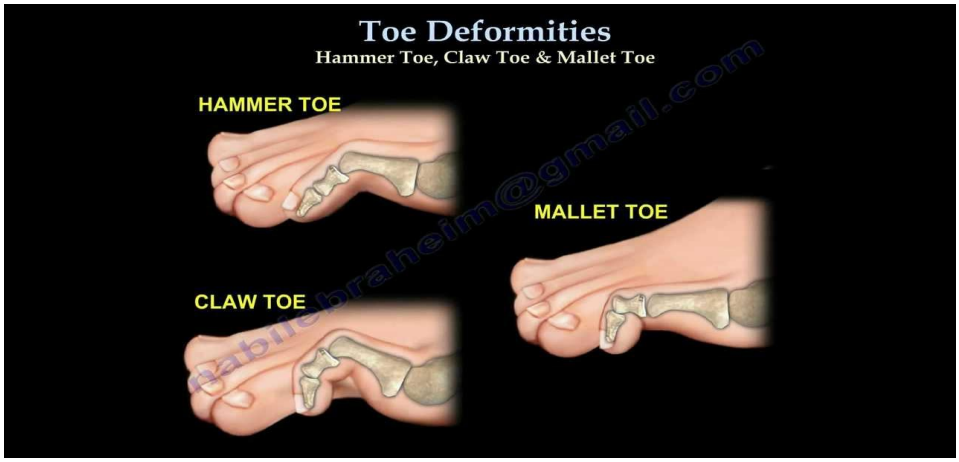
Trigger Finger

Mallet Finger(Baseball Finger)

ePainAssist.com


Hallux valgus
Hammer toe
Rheumatoid nodule
© Healthwise, Incorporated


Boutonniere Deformity
Tear in Central Slip
PIP Joint in Flexion
DIP in Hyperextension



In the hands, there is typical ulnar deviation of the MCP joints and wrists. Sometimes, there is anterior subluxation of metacarpal heads and medial dislocation of the extensor tendons. Swan neck deformity of the fingers consists of hyperextension of the PIP joints and flexion of the distal interphalangeal joints. This deformity impairs effective handgrip. Sometimes, the extensor expansion overlying the PIP joint ruptures resulting in the dorsal protrusion of the head of the proximal phalanx. This leads to flexion of the PIP joint and hyper extension of the distal interphalangeal joint deformity.

The extensor tendons may undergo attrition, these result in loss of extension of the fingers [dropped fingers]. Large joints like the knees, wrists, ankles, elbows, and shoulders may also be involved. Tense synovial effusions may develop in the knees. Baker's cysts are tense cysts developing in the popliteal fossae as a result of collection of synovial fluid.

These may occasionally rupture giving rise to a painful and tender swelling on the calf. Lateral subluxation of the knee joint is also very common. Chronic arthritis develops which leads to permanent deformities. Deformities are also common in the feet. Hammer toe **is** flexion at the PIP joint and hyper extension at the MTP joint.**Hallux valgus** may also develop. The arches of the feet may be lost due to affection of the joints and ligaments. Callosities develop over prominent bony points.

Less commonly, the cervical spine and temporo mandibular joints are affected, but when they occur, the lesions are characteristic. At the atlanto axial joint, the transverse ligament of the atlas may be weakened leading to **atlantoaxial subluxation**.This leads to pain in the neck and pain refered to the temporal and retro-orbital regions. There may also be a clunking sound in the neck on flexion. It is dangerous to manipulate the neck to elicit this sign. Atlantoaxial subluxation produces a host of neurological manifestations.

The risk of sudden compression of the spinal cord is high in such subjects. Hence, tracheal intubation and similar procedures, which require manipulation of the neck should be done only with caution. **Temporomandibular arthritis** leads to pain on mastication. Other portions of the spine, such as the dorsolumbar regions and sacroiliac joints are usuallynot affected in RA.

TISSUE INVOLVEMENT IN RA:

SYSTEMIC INVOLVEMENT:

EXTRA-ARTICULAR MANIFESTATIONS

Skin: painless and nontender subcutaneous nodules ranging in size from a few millimeters to a few centimeters develop around the extensor aspects of the elbow and other subcutaneous bony surfaces and over tendons in 20-30% of cases.

They are almost always associated with a positive serology. They persist for considerable periods. Involvement of blood vessels gives rise to raynaud's phenomenon, vasculitis of the nailbeds and finger pulps, nonhealing ulcers of the finger, palmar erythema and hyperhidrosis of the extremities.

Eyes : ocular lesions develop in a few cases and these may become disabiling nodular. In necrotizing scleritis, the nodules degenerate and the underlying dark uvea imparts a blue color. Sometimes the sclera may be thickened due to granuloma formation. Perforation of the sclera leads to prolapse of the uvea and eventual rupture of the globe [SCLEROMALACIA PERFORANS].

In the cornea, band keratopathy may develop. This is more frequent in stillsdisease. Though the sclera is affected, it is rare to involve the iris. Lesions of the iris are more frequent in seronegativearthropathies**.**

Respiratory system:cricoarytenoid arthritis manifests as dysphonia, stridor or dyspnea. Recurrent pleural effusion may occur which is usually unilateral. Rheumatoid nodules may develop in the lungs and these maycaviate. Interstitialfibrosis may develop and this may be indistinguishable from the idiopathic type.

Caplan's syndrome:is a special phenomenon occurring in subjects with rheumatoid disease who develop pneumoconiosis. Large coalescing nodules develop in the lungs. These are demonstrable by x-rays.

Cardiovascular system:it is only rarely involved. Lesions include pericarditis, mitral/aortic regurgitation and conduction defects. There is increased incidence of artherosclerosis and ischemic heart disease with higher mortality in RA.

Nervous system: neurological involvement is not uncommon in chronic cases. Entrapment neuropathy such as carpal tunnel syndrome and tarsal tunnel syndrome, may be the presenting lesions or they may develop during the course. **Symmetrical polyneuropathy** develops which improves with treatment. Mononeuritis multiplex also occur in severe cases of rheumatoid disease and leads to foot drop or wrist drop. These are generally resistant to treatment. **Cervical cord compression** due to atlantosublaxation is a less common complication in long-standing RA. Mild cases present with transient neck pain radiating to the back of the head. It can rarely lead to subluxation of the odontoid process with compression of the cord which may end fatally. Progressive clinical **myelopathy** at a lower level may develop insidiously. This is characterized by gradual onset of limb weakness, inability to hold the head erect and quadriparesis. The lesion is due to subluxation at lower levels of the cervical cord.

Renal involvement: Type-Irenal tubular acidosis and analgesics neuropathy can rarely occur.

Secondaryamylodiosisis a late complication in some cases of chronic rheumatoid disease.

Laboratory investigations:

Erythrocyte sedimentation rate [ESR] is markedly raised in the disease and may exceed 100mm/hour in the majority. Normochromic normocytic anemia, iron-deficiency anemia or rarely hemolytic anemia may be present in the acute phase. Serum protein electrophoresis may show elevation of α and γ- globule

Ins. C-reactive protein [CRP] will also be high.

SEROLOGY:

Rheumatoid factor :

Antibodies in rheumatoid disease, especially the immune- globulin M [IgM], can be demonstrated by the **rose-waaler test, latex filtration test or nephelometry.** RF is positive in 70-80% of adults with RA. tn 20-30% of cases antinuclear antibodies may be demonstrable. To establish seropositivity, the test should be positive atleast on two occasions separated by 3-6 months. If negative, it should be repeated atleast once more after 6-12 months. Five to ten percent of normal individuals, especially elderly, may show RF positivity in low titers.

Antibody to anti- cyclic citrullinated peptide

It is a new antibody test for the early diagnosis of RA. Formations of anti-CCP antibodies are highly specific for RA patients. Anti-CCP antibodies are present early in erosions change in bone.

Antinuclear antibody

Anti nuclear antibody [ANA] of unknown specificity may be positive in 30% of RA.

SYNOVIAL FLUID ASPIRATION:

This reveals a turbid fluid with low viscosity and poor mucin clot. The whita cell count in the fluid exceeds 1500/mm. The cells are mostly neutrophils even though the synovial membrane is not infiltrated by them. Complement levels are low. The protein content will also be high.

RADIOLOGY :

Characteristic lesions, which have been graded from I to IV, are seen radiological study.

- **Grade I:** soft tissue swelling which indicates synovitis with or without juxta- articular osteoporosis which indicates active inflammation.
- **Grade II:**narrowing of joint space due to cartilage destruction.
- **Grade III:**erosions which may be of two types:

    1.surface erosion at joint margins.

    2. Cystic erosion of the bone shaft.

- **Grade IV:** marked irregularity of articular surfaces with subluxation and secondary degenerative changes. Bony ankylosis occurs only very rarely.

DIAGNOSIS :

The diagnosis is to be made on clinical examination and laboratory criteria. Since, clinically several conditions resemble RA, new diagnostic criteria have been laid down by the joint committee for American college of rheumatology [ACR] and European league againt rheumatism [EULAR] in 2010. This score is based on :

- Joint involvement
- Autoantibody status
- Duration of joint symptoms.

A score with six or more points supports the diagnosis of RA. Patients with typical bony erosion or long standing disease previously satisfying the criteria can also be labelled as RA.

DIFFERENTIAL DIAGNOSIS:

RA has to be distinguished from **rheumatic arthritis** in which children are more affected, the joint lesions are migratory, large joints are affected, effusions is prominent and ASO titre is high [> 1/200 todd units].

Psoriatic arthritis:

In psoriatic arthritis, there is invariabily evidence of psoriasis of the skin or nails and the arthritis involves the small joints of the hands and feet more. The hand may be severly multilated[**arthritis mutilans**]. Involvement of the sacroiliac joints and spine is not uncommon.

Gout:

Several joints may be affected in gout. The MTP joint of the big toe is characteristically affected more frequently, though any joint may be involved. In chronic tophacdeous gout, tophi may be seen as nodules around the joints, especially the elbow.

Osteo arthritis:

It affects elderly subjects. Most common joints affected are the spine, hips, knees and distal interphalangeal joints.**Heberden's nodes** may be seen at the base of the distal phalanges. The condition is progressive . The ESR is generally normal or only mildly elevated. In many cases, rheumatoid and osteo arthritis may co-exsist in different joints.

OTHER CONDITIONS:

Other conditions which may mimic RA are syphilitic arthritis, gonococcal arthritis, reactive arthritis and ankylosing spondylitis. In ankylosing spondylitis, the sacroiliac joints and spine are maximally affected. Pheripheral joint

involvement is less common and predominantly involves large joints of lower limb[knees, ankles and hips].

In india several other conditions should be considered when the clinical presentation and investigation are not helpful straight away. These include allergy to tuberculosis [poncdet's disease], serum sickess like reactions, reactions in leprosy, drug –induced arthralgias, infections such as chikungunya, brucellosis, joint tuberculosis, human immunodeficiency virus [HIV] infection and many others.

PROGNOSIS:

In general, the disease tends to become recurrent and chronic and in many cases it leads to considerable disability and deformity. Severe RA shortens life. It tends to severe impairment of the quality of life. A third of the patients with RA deteriorate clinically by consumption of food particles such as trout, fishes, peas, carrot, bottled mineral water, sea salt, milk, dairy products, wheat, coffee, chocolate, citrus fruits, corn and others. Free amino acids and oligopeptides contained in some of them are weakly antigenic and they may be responsible for this adverse effect.

COMPLICATIONS – EXTRA ARTICULAR MANIFESTATIONS:

Systemic: • Fever • Weight loss • Fatigue • Susceptibility of infection.	**Vasculitis:** • Digital arteritis • Ulcers • Pyodermagangrenosum • Mononeuritis multiplex • Visceral arteritis
Musclo skeletal: • Muscle wasting • Tenosynovitis • Bursitis • Osteoporosis	**Cardiac:** • pericarditis • myocarditis • endocarditis • conduction defects • coronarvasculitis • granulomatous arthritis

Haemotological : • anaemia • thrombocytosis • eosinophilia	**Nodules:** • sinuses • fistula
Lymphatic: • splenomegaly • lymphadenopathy • felty's syndrome	**Pulmonary:** • nodules • pleural effusion • fibrosingalveolitis • bronchiolitis • caplan's syndrome
Ocular: • episcleritis • scleritis • scleromalacia • kerato conjunctivitis sicca	**Neurological :** • Cervical cord compression • Compression neuropathies • Peripheral neuropathy • Mononeuritis multiplex • Amyloidosis

RHEUMATIC VARIANTS:

JUVENILE IDIOPATHIC ARTHRITIS (JIA):

It is the most common cause of chronic arthritis in childhood. This term encompasses all idiopathic arthritis affecting children below 16 years of age and lasting for more than 6 weeks. This may be oligo- or polyarticular. In the oligoarticular types lower limb joints-knees, hips,

ankles and tarsal joints are affected asymmetrically. In the polyarticular type both small and large joints are affected, usually in a symmetrical manner. The clinical features may be confined to the skeletal system, but in 10% the onset and course are characterized by systemic manifestations such as high fever (>38.5°C) transient erythematous rash, generalized lymphadenopathy, hepatosplenomegaly, anemia and weight loss. Fever is intermittent with periods of normal temperature in between, during which the child appear to be normal. The serious complications include *macrophage activation syndrome* characterized by onset

of thrombocytopenia, anemia, liver dysfunction and rapid downhill course which may end fatally.

STILL'S DISEASE :

(CHRONIC JUVENILE POLYARTHRITIS) :

This disorder occurs before the age of 16 years. Girls are affected more than boys. It differs from adult rheumatoid disease in that the disease is more often pauciarticular.Rash, fever, mphadenopathy, and splenomegaly are characteristic. Subcutaneous nodules are rare and rheumatoid factor is negative. Eye involvement with uveitis and keratopathy is more common. The treatment is along the same lines as for adult rheumatoid arthritis.

FELTY'S SYNDROME :

This is seen in older age groups. In addition to the classic features of seropositive rheumatoid arthritis, splenomegaly and neutropenia also occur. Splenomegaly may lead to hypersplenism. Splenectomy may have to be considered to correct hypersplenism, in addition to treatment for the rheumatoid state.

SJÖGREN'S SYNDROME (SS) :

This is a chronic inflammatory autoimmune disease characterized by mixed cellular infiltration of the exocrine glands, particularly the lachrymal and salivary glands- a form of autoimmune exocrinopathy (autoimmune epithelitis). This results in dryness of the eyes (xerophthalmia), dryness of the mouth (xerostomia) and frequently, dryness of the nose, throat and vagina. This condition predisposes to increased risk of ***mucosaassociated lymphoid tissue lymphoma*** **MALT lymphoma).** SS may be primary in which it is the only demonstrable abnormality. Secondary SS, known also as sicca complex may be associated with any of the other autoimmune diseases. Radiation therapy of the head and neck for Hodgkin's disease, sarcoidosis, amyloidosis and tuberculosis may lead on to SS.

PALINDROMIC RHEUMATISM :

In this condition repeated attacks of joint pains, redness and swelling occur. The attacks occur suddenly within hours and may affect one joint usually. The affected joint shows signs of inflammation. These last for a few days and subside without any residual lesions. The ESR is raised during the attacks and remains high even during the intervals. After varying periods of time, typical rheumatoid arthritis supervenes in many cases, whereas spontaneous remission occurs in some patients.

MATERIAL AND METHODS

MATERIALS AND METHODS

The Evaluation on Uthiravatha Suronitham was carried out in the OPD and IPD of the Sirappu Maruthuvam department, Govt. Siddha Medical College, Chennai.

STUDY DESIGN & CONDUCT OF STUDY:

STUDY TYPE : An open Pilot study

STUDY PLACE : OPD & IPD of Govt.Siddha Medical College & Hospital, Chennai.

STUDY PERIOD : 12 Months

SAMPLE SIZE : 40 patients (20 OP+20 IP).out of 20 op patients treated with internal alone and 20 IP patient treated with internal and external medicine.

TREATMENT :

INTERNAL MEDICINE :

GANDHAGA RASAYANAM:

Reference : AthmaratchamirthamVaithyasarasangraham,pg no:438

Dose :500mg, twice a day.

Adjuvant : Hotwater

Duration : 48days

EXTERNAL MEDICINE :

NAVANATHASITTHA THAILAM:

Reference : Theren thaila varga surukkam (Pg.No:133)

Dose : 25ml for external use

INCLUSION CRITERIA :

- Age : 18-60 years
- Sex : Both Male and Female
- Symmetrical joint involvement
- Arthritis of 3 or more joints
- Rheumatoid factor positive or negative
- CRP positive
- AntiCCP positive
- Morning stiffness
- Swelling especially in the inter Phalangeal joint.
- Patients who are willing for admission and stay in ipd for 48 days or willing to attend OPD
- Patient who are willing to undergo radiological investigation and give blood and urine samples for laboratory investigation.
- Patient willing to sign the informed consent stating than he/she will consciously stick to the treatment during 48 days but can opt out of the trial of his/her own conscious discretion.

EXCLUSION CRITERIA :

- Hypertension and other cardial ailments.
- Diabetes mellitus
- Rheumatic fever
- Narcotics
- Alcoholics and smokers
- Pregnancy and lactation
- History of sulphur allergy
- Tuberculosis
- Any other serious illness
- Psoriatic arthropathica
- Gouty arthritis

WITHDRAWAL CRITERIA :

- Intolerance to the drug and development of adverse reactions during drug trial.
- Poor patient compliance and defaulters.
- Patient turned unwilling to continue in the course of clinical trial.
- Occurrence of any adverse reactions.

TESTS AND ASSESSMENT :

A. Clinical assessment
B. Routine investigations
C. Specific investigations
D. Radiological investigations
E. Siddha investigations

A. CLINICAL ASSESSMENT :

- Arthritis involving three or more joints(with or without soft tissue involvement lasting more than 6 weeks)
- Symmetrical arthritis(atleast one area lasting for 6 weeks)
- Morning stiffness
- Anorexia
- Spindle shaped appearance of fingers
- Rheumatoid nodules
- Depression
- Radiographic changes

B. ROUTINE INVESTIGATION :

BLOOD:

Hb

Total WBC count

DC – Polymorphs

1. Lymphocytes

2. Eosinophils
3. Monocytes
4. Basophils

Total RBC Count

ESR

½ Hr

1 Hr

Blood Sugar

R:

F:

PP:

Serum cholesterol.

URINE

Albumin

Sugar (F)

(PP)

Deposits

Kidney Function tests

Urea

Creatinine

Liver function tests

Serum Total bilirubin

Direct bilirubin

Indirect bilirubin

Serum Alkaline phosphatase

SGOT

SGPT

C. SPECIFIC INVESTIGATIONS

CRP

RA factor

ASO titre

AntiCCP

D. RADIOLOGICAL INVESTIGATIONS :

X Ray of affected joints (Ap and Lateral view)

E. INVESTIGATION BASED ON SIDDHA SYSTEM :

1. Naa
2. Niram
3. Mozhi
4. Vizhi
5. Naadi
6. Sparisam
7. Malam
8. Moothiram
9. Neikuri
10. Neerkuri

DATA COLLECTION FORMS:

Required information will be collected from each patient by using the following forms

FORMS:

FORM I **:** Screening and Selection Proforma

FORM I A **:** History Proforma on Enrollment

FORM II : Clinical assessment on enrollment

FORM II A **:** Clinical assessment during and after trial

FORM III : Laboratory Investigation on enrollment and conclusion of trial

FORM IV : Consent Form

FORM IV B : Withdrawal form

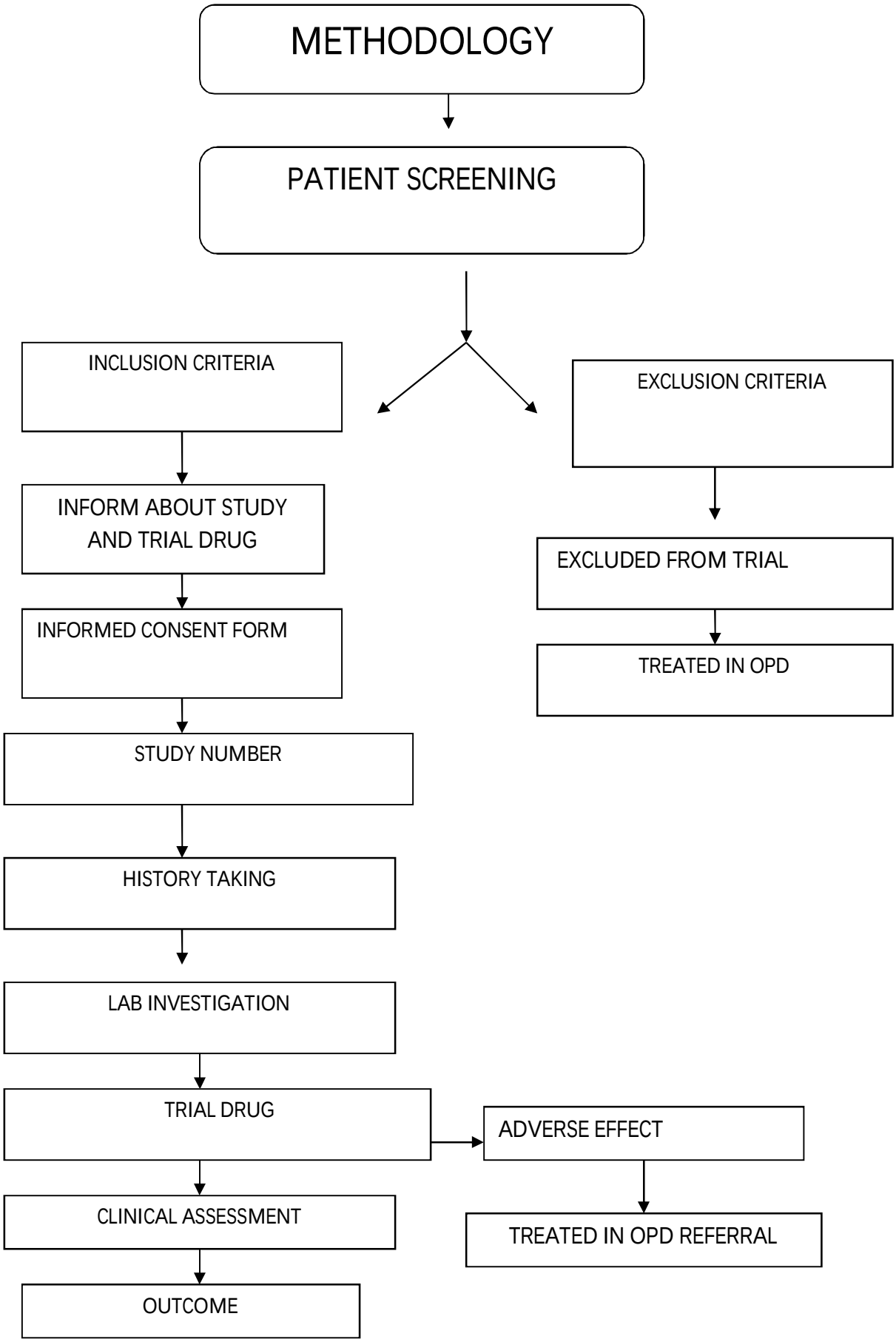
FORM IV C : Patient information sheet

FORM IV D : Dietary Advice form

FORM IV E : Adverse Reaction form

FORM IV F : Discharge proforma

METHODOLOGY



STUDY ENROLLMENT:

Patients reporting at the OPD of Govt. siddha medical college and hospital, Chennai.with the clinical symptoms of fatigue, weekness, vague arthralgia, myalgia ,joint stiffness are choosen for enrolment based on the inclusion and exclusion criteria.

The patients who are to be enrolled would be informed (form IV) about the study, trial drug, possible outcomes and the objectives of the study in the language and terms understandable to them.

After ascertaining the patient's willingness, informed consent would be obtained in writing from them in the consent form (form IV). All these patients will be given unique registration card in which patient's registration number of the study, address, phone number and doctor's phone number etc., will be given, so as to report easily should any complications arise.

Complete clinical history, complaints and duration, examination findings—all would be recorded in the prescribed proforma in the history and clinical assessment forms separately. Screening Form – I will be filled up. Form – II and form – III will be used for recording the patient's history, clinical examination of symptoms and signs and laboratory investigations respectively. Patients would be advised to take the trial drug and appropriate dietary advice (Form IV-D) would be given according to the patients perfect understanding.

CONDUCT OF THE STUDY:

10ml of Vellai ennai is given in early morning, on the very first day of treatment for purgation. This will help to bring the vitiated mukkutram back to normal. From the next day, the trial drug is given for treatment.

The trial drug will be given in the OPD department of PG sirappu maruthuvam, GSMC, Chennai. The patients will be asked to have a regular follow up in the OP department once in 2 days. In each and every visit the clinical assessment will be recorded in the prescribed proforma. The laboratory investigation will be done before and after treatment and recorded in the prescribed format.

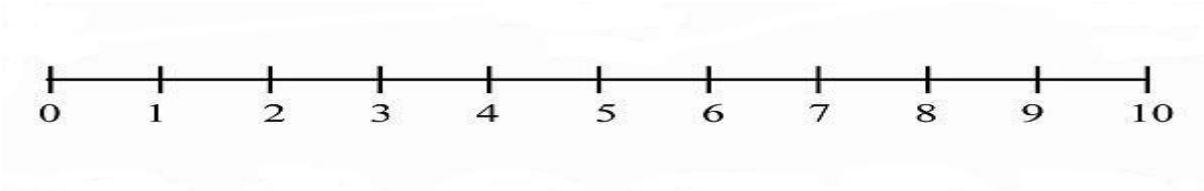
DATA MANAGEMENT:

After enrolling the patient for the study, a separate file for each patient will be maintained and all forms will be kept in the file. Study No. and Patient identity No. will be written on the top of file for easy identification. Whenever study patient visits OPD during the study period, the respective patient file will be taken and necessary enteries will be made at the assessment form or other suitable form. The screening forms will be filed separately. The data recordings will be monitored by HOD and pharmacovigilance committee. All forms will be further scrutinized in presence of Investigators with concerned Department faculties for logical errors and incompleteness of data to avoid any bias. No modification in the results is permitted for unbiased report.

OUTCOME:

The outcome is by comparing the reduction of symptoms before and after treatment.

UNIVERSAL PAIN ASSESSMENT SCALE



A. A .0 : No Pain

B. 1 -3 : Mild pain

C. 4-6 : Moderate pain

D. 7-10 : Severe pain

- Reference: Clinical Manual for Nursing Practice. (National Institute of Health Warren Grant Magnuson Clinical Center)

Restricted movements is assessed by

GRADATION OF RESTRICTED MOVEMENTS :

- G I – Able to perform normal duties
- G II – Moderate Restriction – Self care is possible.
- G III – Marked restriction – Limited self care / Some assistance required.
- G IV – Confined to bed or wheel chair.

ADVERSE EFFECT/SERIOUS EFFECT MANAGEMENT

If the trial patient develops any adverse reaction, he/she would be refered tothe pharmacovigilance department of SCRI and documented .For any adverse effect the investigator will give the proper management in the OPD.

ETHICAL ISSUES:

- To prevent any infection, while collecting blood sample from the patient, only disposable syringes, disposable gloves, with proper sterilization of laboratory equipments will be used.
- No other external or internal medicines will be used, other than the trial drug for uthiravatha suronitham. There will be no infringement on the rights of patient.
- The data collected from the patient will be kept strictly confidential. The patient will be informed about the diagnosis, treatment and follow-up.
- After getting the consent of the patient (through consent form) they will be enrolled in the study.
- Treatment would be provided free of cost.

In conditions of any treatment failure or adverse reactions, patients will be given alternative treatment at the Govt. Siddha Medical College & hospital, Chennai.with full care throughout the end.

TRIAL DRUG

TRAIL DRUG PREPARATION :

INTERNAL MEDICINE :

GANDHAGA RASAYANAM:

Reference : AthmaratchamirthamVaithyasarasangraham,pg no:438

(Rathna naickar and sons)

Dose :500mg, twice a day.

Adjuvant : Hot water

Duration :48 DAYS

INGREDIENTS:

S.no	Tamil name	Botanical name	Quantity
1	Thirikaduku	Zingiber officinalae Piper nigrum Piper longum	16.8gm each
2	Kirambu	Syzygium aromaticum	16.8gm
3	Elam	Elattaria cardamomum	16.8gm
4	Elavanghapattai	Cinnamomum verum	16.8 gm
5	Elavanghapatri	Cinnamomum tamale	16.8 gm
6	Sathikkai	Myristica fragrans henlt	16.8 gm
7	Omam	Carum copticum	16.8gm
8	Jeerakam	Cuminum cyminum linn	16.8 gm
9	Poonaikkali	Mucuna pruriens linn. Dc	16.8 gm
10	Neermulli	Hygrophylla auriculata	16.8 gm

11	Nerunjil	Tribulus terrestris linn	16.8 gm
12	Ashwagandhi kizhanghu	Withania somnifera linn	16.8 gm
13	Kumkuma poo	Crocus sativus linn	16.8 gm
14	Sathipathri	Myristica fragrans henlt	16.8 gm
15	Thiripalai	Terminalia chebula Terminalia bellarica Embelica officinalis	16.8 gm
16	Perichampalam	Phoenix sylvestris	16.8 gm
17	Kothamalli	Coriandrum sativum	16.8 gm
18	Sadamanjil	Nardostachys grandiflora Dc	16.8 gm
19	Athimadhuram	Glycyrrhiza glabra linn	16.8 gm
20	Thakkolam		16.8 gm
21	Candanam	Santalum album linn	16.8 gm
22	Munthirikkai	Anacardium occidentale linn	16.8 gm
23	Karunjeerakam	Nigella sativa linn	16.8 gm
24	Paranghipattai	Smilax chinensis linn	700 gm
25	Aanaithippili	Scindapsus officinalis schott	16.8 gm
26	Thippili moolam	Piper longum	16.8 gm
27	Citramoolam	Plumbago indica linn	16.8 gm
28	Kurosaani omam	Hyoscyamus niger linn	16.8 gm
29	Vilamichhu veer	Plectranthus vettiveroides	16.8 gm
30	Sirunagha poo	Mesua nagassarium kosterm	16.8 gm

31	Talisa patri	Abies spectabilis mirb	16.8 gm
32	Poolangkizhangu	Curcuma zedoaria rosc	16.8 gm
33	Vettiver	Vetiveria zizanoides linn	16.8 gm
34	Tanner vittan kizhanghu saru	Asparagus racemosa willd	7.8 l
35	Koovai neer	Maranta arundinaceae linn	16.8 gm
36	Nilapanai kilanzhu	Curculigo orchioides	16.8 gm
37	Muthakkasu	Cyperus rotundus linn	16.8 gm
38	Sitrathai	Alpinia galangal linn	16.8 gm
39	sarkarai	Sugar	2450 g
40	gandhagam	Sulphur	140 g
41	then	Honey	1.3 l

DESCRIPTION OF INTERNAL MEDICINE:

S.no	Tamil name	Botanical name & family	Vernacular name	Chemical composition	Parts used	Suvaai	Tanmai	Pirivu	Actions
1	Kirambhu	Syzygium aromaticam Myrtaceae	Hin-laung Eng-clove San-lavanga	Eugenol, furfural, vanillin, methyl alcohol, methyl benzoate	Clove oil, flowral bud	Karppu	veppam	karppu	Antispasmodic,carminative,stomachic
2	Elam	Elettaria cardamom zingiberaeceae	Hin-chotiilaichi Eng-lessercardamom San-ela	Bornneol, camphene, linalool, myrcene, methane, heptane.	Seeds	Karppu	Veppam	Karppu	Stimultant., carminative, stomachic
3	Lavangha pattai	Cinnamomum zeylanica lauraceae	Hin-dalchini Eng-cinnamon San-tvak	Eugenol, methyl amyl ketone, cymene, borneol	Bark	Kaaram, enippu, thuvarppu.	Veppam	Karppu	Carminative, haemostatic
4	Lavangha pattiri	Cinnamomum tamalanees Lauraceae	Hin-tejapatra, San-patra	Eugenol, linalool, cinnamic aldehyde	Leaf	Enippu, karppu	Veppam	karppu	Carminative
5	Saathikai	Myristica fragran	Hin-jaiphal	Safrole, elemin, cyanadin,	Fruit	Thuvarpu karpp	Veppam	Karppu	Stimulant, carminat

		s henlt Myristicaceae	Eng-nutmeg San-jatiphala	nectandrin, trimyristin		u			ive, narcotic, aromatic, aphrodisiac
6	Omam	Carum copticum benth & hook Umbelliferrae	Hin-ajamoda Eng-bishops seed, San-yavani	Luteolin, apigravin, apiin, anthoxanthins, sedanolide	Seed	Karppu	Veppam	Karppu	Stomachic, antispasmodic, carminative, antiseptic, stimulant
7	Jeerakam	Cuminum cyminum Umbelliferae	Eng-cuminum seeds, San-jeeraka	Cuminin, apigenin, Oxalic, apiin, imperatorin, p-cymene	Seed	Karppu	Veppam	Enippu	Carminative, stimulant, astringent, stomachic
8	Poonaikaali	Mucuna pruriens linn Fabaceae	Hin-kavach, eng-common cowitch, san-kapikacchu	Mucunine, prurienine, stearic, palmitic, myristic, sterol, choline	Seed, root	Thuvarppu,	Tatpam	Enippu	Astringent, nervine tonic, aphrodiasiac, vermifuge, irritant
9	Neermulli	Hydrophylla auriculata Acanthaceae	Hin-talmakhana, Eng-long leaved barleria, san-	Hygrophiloside	Flower, seed	Enippu	Tatpam	Enippu	Demulcent, diuretic, refrigerant, aphrodisiac

			kokil aksha						
10	Nerunjil	Tribulus terrestris linn Zygophyllaceae	Hin-gakhru Eng-small caltrops San-gokshura	Chlorogenin, diosgenin, rutin, trillin, furostanol glycoside	Whole plant	Thuvarppu, enippu	Seetam	Enippu	Refrigerant, diuretic, aphrodisiac, astringent
11	Aswakenthi kilangh u	Withania somnifera linn Solanaceae	Hin-asgandha Eng-winter cherry San-aswagandha	Withafein, somnirol, somnitol, nicotine, tropine, solasodine	Leaf, seed, root	Kaippu,	Veppam	Karppu	Febrifuge, diuretic, aphrodisiac, deobstruent, soporific, sedative
12	Kumkuma poo	Crocus sativus linn	Hin-kumkum kesar Eng-saffron, san-kunkuma	Crocin-1,2,3,4; esters of crocetin, picrocin, crosatosides	Stamens / stigma	Kaippu	Veppam	Karppu	Stimulant, stomachic, anodyne, antispasmodic, emmenagogue
13	Saati patri	Myristica fragrans henlt Myristicaceae	Hin-javatri Eng-arillus of the nut San-jatipa	β pinene;α terpinene; Myristicin; trimyristin; myristic acid; cyanadin; neolignans	Seed; seed coat; Oil	Karpu; Thuvarpu;	vetpam	Karpu	Aphroidsiac; Carminative; Stimulant; Hypnotic

			tri						
14	Thiripala	Terminalia chebula, combretaceae Terminalia bellarica, combretaceae Embellica officinalis, euphorbiaceae	Hin-Thiripala Eng-Three Myrobalans San-Triphala		Fruit	Thuvarpu;	Vetpam	Karpu	Astringent
15	Perichampazlam	Phoenix Sylvestris Roxb Arecaceae	Hin-Kharjur Eng-Dates Palm San-Kharjura		Fruits, Leaf	Eenipu	Seetham	Eenipu	
16	Kothamali	Coriandrum Sativum Linn Apiaceae	Hin-Dhanya Eng-Coriander Seeds San-Dhanyaka	Carotene; Bergapten; Coriandrind; Coriandrin ;Citronellol; Coriandrone A& B gnaphalosides A&B	Leaf; Seed	Karpu	Seetha Vetpam	Karpu	Stomachic; Carminative; Stimulant; Diuretic
17	Sadaa Manjal	Nardostachys gradifl	Hin-Jatamasi	Actinideine; Carotene; Aristolens;	Root	Eenipu	Vetpam	karpu	Stimulant; Antispasmodic;

		ora DC valeriana naeae	Eng-Valerina Root San-Jatamansi	Elemol; Jatamols A&B; Jatamansic Acid; Nardostachonol; Nardol; Virolin; Spirajatomol					Diuretic; Expectorant
18	Athimathuram	Glycyrrhiza glabra Linn Fabaceae	Hin-Jathi Madh; Eng-Jamaica Liquorice San-yastimadhu	Glycyrrhizin; Glycyrrhizic Acid; Liquirtin; Isoliquirtin; Glabranine; Glabrolide; Hispaglabridin A & B Licoricidin	Root	Eenipu	Vetpam	Karpu	Emollient; Demulcent; Laxative; Mild Expectorant; Tonic
19	Thakkol					Thuvarpu	Vetpam	Karpu	Anti-Vatha; Astringent; Febrifuge; Nutritive
20	Sandanam	Santalum album linn Santalaceae	Hin-Chandan Eng-Sandal Wood San-Chandana	α santol;βsantene & Santalenes; teresantalol; nor-tricycloekasantalal; Santanone; Tere Santalic Acid	Maram; Oil	Kaippu; Siru Thuvarpu	Vetpam; Thitpam	Eenipu; Karpu	Alternative; Diuretic; Diaphoretic; Stimulant; Disinfectant; Astringent; Cooling

21	Muthirikkai	Anacardium Occidentale Linn	Hin-Kaju Eng-Cashew Nut Tree San-Shophakara		Fruits; Seed; Bark	Fruit-enippu Bark-thuvarppu	Fruit-tatpam Bark-tatpam	Fruit-enippu Bark-thuvarpu	Palam-Diuretic;Stimulant; Pattai-Astringment; Vithai-Tonic; Aphrodisiac
22	Karunjeerakam	Nigella sativa Linn Ranunculaceae	Hin-Kulanji Eng-Black Cumin San-Upakanchika	Poisonous Saponin; Melanthin BitterAlkaloid; Cymine; Carvone;Limonene; Nigellin	Seed	Kaippu	Vetpam	Karpu	Carminative; Diuretic; Emmenagogue; Stomachic Galactogogue; Anthelmintic; Parasticide; Emollient
23	Parangipatti	Smilax china Linn Liliaceae	Hin-Chobchini Eng-China Root San-Madusnuhi	Shikimic Acid; Ferulic Acid; Smilaxin; βSitosterol; Engeletin; Astilbin	Tuber	Eenipu	Tatpam	Eenipu	Alterative; Antisyphilitic; Aphrodisac; Depurative
24	Aanaithipillai	Scindapsus officinalis Schott Araceae	Hin-Boai-Pipli San-Gaja-Pippali	Sitosterol, piplartine.	Seed	Karppu	Vetpam	Karppu	Stomachic; Stimulant; Anthelmintic; Sudorific (Diaphoretic)

25	Thipili moolam	Piper longum Piperaceae	Hin-Felfelai-Maya Eng-Long Pepper Root San-pippali moolam	Essential Oil; Piperine; βsitosterol; Cepharadiones	Root	Eenipu	Vetpam	Eenipu	Stomachic
26	Citra Mulam	Plumbago indica linn Plumbaginaceae		Chitratnone, plumbagin, droserone, elliptinone, zeylinone, maritone, plumbaghic acid	Root, bark	Karppu	Veppam	Karppu	Stomachic stimulant, tonic, caustic, vesicant diaphoretic
27	Kurosaani omam	Hyoscyamus niger Linn Solanaceae	Hin-Khorasani-Ajaowan Eng-Black Henbane San-Parasika Yavani	Apoatropine; Hyoscine; Tropine; Hyoscine-N-Oxide; Aphoyoscine	Seeds	Karppu	Vetpam	Karppu	Hypnotic; Sedative; Anodyne; Anti Spasmodic; Mild Diuretic
28	Vilaamichai Ver	Plectranthus vettiveroides (Jacob) Singh & Sharma	Hin- Eng-White Cus Cus Grass San-Hribe		Root	Kaippu	Seetham	Eenipu	Refrigerant; Anti pittha

		Lamenaceae	ram						
29	Sirunaga poo	Mesuanagassarium (Burm.f) Kosterm gutiferaceae	Hin-NagKesara Eng-Ceylon Lorn Wood San-Naga Kesara	Mesual; Mammegin; Bioflavonone-Mesuaferrona; Cyclohaxodione;βamyrin	Leaf, Flower, Seed, Root, Bark	Sirukaippu; Thuvarpu	Thatpam	Karppu	Poo-Astringent; Carminative Kaai-Aromatic; Acrid; Purgative Pattai-Mild Astringent
30	Thaalisapathiri	Abies spectabilies (D.Don) Mirb Pinaceae	Hin-Talispatram Eng-Many Spiked Flacortia San-TalkisaPathra	Abiesin; n-triacontanol; Betuloside; βsitosterol; A bioflavonoid	Leaf	Karppu	Vetpam	Karppu	Stomachic; Carminative; Expectorant; Tonic
31	Poolangh kizhangu	Curcuma zedoaria Rose Zingiberaceae	Hin-Kachur Eng-Round White Zedary San-Kachura		Leaf, Tuber	Kaippu	Vetpam	Karppu	Stimulant; Carminative; Expectorant; Diuretic; Alternative; Aromatic

32	Vetiveru	Vetiveria zizanoides Linn Graminaceae	Hin-Khas Eng-Khas khas Grass San-Ushira	Benzoic Acid; Euugenol; Khusimone; Cyclocapa camphene; βEudesmol; Vanillin; Zizaene; Vetivenic Acid; Epizizanal	Root	Enippu	Seetham	Karppu	Coolent, anti pitta
33	Thannervittan kizhangu charu	Asparagus racenasus Wild	Hin-Satavare Eng-Wild Asparagus San-Shatavari	Sarsapopgenin; Sitosterol; Asparagamine A; βsitosterol; Diosenin;Sarasapogenin; Rutin	Leaf, Tuber	Eenipu	Thatpam	Eenipu	Nutritive; Demulcent; Galactagogue; Aphrodisiac; Anti-Spasmodic
34	Chukku	Zingiber officinalae Zingiberaceae	Hin-sonth San=nagaram Eng=dried ginger	Gingerol Zingerone Shagaol	Tuber(dry)	karpu	Veppam	karpu	Stimulant Stomachic carminative
	Milagu	Piper nigrum Piperaceae	Hin-kali mirch San-maricha Eng-black pepper	Piperine Pinene Alkaloids flavanoids Lignans sabinene	seed	Kaipu. karpu	veppam	karpu	Acrid Carminative Antiperiodic Rubefacient Stimulant Resolve

									nt Antivatha antidote
	Thippilli	Piper longum Piperaceae	Eng-long pepper Tel-pippilu San-pippali	Piperine Rutin Beta-caryophylline Piperyline piperoleines	Seed Thippilli rice	Inippu	tatpam	inippu	Stimulant carminative
35	Koogai Neer	Maranta arundinaceae linn Marantaceae	Hin-tikhar Eng-east India n arrow root		Rhizome	Enippu	Tatpam	Enippu	Refrigerent, demulcent, nutrient
36	Nilapanaikizhangu	Curculigo orchioides	Hin-musalikano Eng-black musale San-musale	Curculigoside A.B and C Curculigine A and D	Root and tuber	inippu	tatpam	inippu	Tonic Dieuretic Astringent Carminative emolient
37	Mutthakasu	Cyperus Rotundus Linn	Hin-Mutha Eng-Nut Grass San-Must	Cineol; Copaena; Cyperen I & II; Isopatchouenone; Rotundone Mustakane; Kobusone;	Tubers	Kaippu	seetham		Astringent; Stimulant;Tonic; Diuretic; Diaphoretic; Demulc

			a	Sugenol;βsitosterd; Copadiene					ent; Vermifuge; Emmenagegue
38	Sitrattai	Alpinia Galanga Linn	Hin- Eng-Galangal the Lasser San-Rasna	Galangin; Kaempferide; Diaryl-Heptanoids	Root	Karppu	Vetpam	Karppu	Expectorant, febrifuge, Stomachic.

SULPHUR:

- Sulfur is a chemical element with symbol of **"S"**and atomic number "16".
- It is an abundant multivalentnon- metal.
- Sulfur is the third most abundant mineral in the body;about half concentrated in our muscles, skin and bones and is essential for life.
- Sulfur is the sixth most abundant macro- mineral in human breast milk
- It is widely distributed in close proximity to hot springs and volcanoes.
- Sulfur is an essential nutrient and therefore cannot be synthesized by the human body and instead must be obtained from the diet.
- Sulfur is not present as an isolated element in the body, the primary placement of sulfur in the human body is in the sulfur-containing amino acids (SSA).
- Methionine, cysteine and taurine are the sulfur containing amino acids.
- The human body composed of 0.2 – 0.3% sulfur.
- Generally, proteins contain about1% sulfur by weigh.

PHYSICAL PROPERTIES:

Color**:** Pale yellow, non- metallic

Phase**:** Solid

Crystalline structure & forms**:** Rhombic, Amorphous and Prismatic

Odor**:** Odorless

Taste**:** Tasteless

Solubility**:**Insoluble in water

Boiling point**:** 444.6^{o}C

Conductivity**:** A poor conductor of heat and electricity

Viscosity**:** Upon melting, sulfur is converted into a mobile

Yellow liquid

CHEMICAL PROPERTIES:

Chemical formula**:** S

Compounds**:** Hydrogen sulfide, Sodium sulfide

Oxidation**:** Sulfur dioxide, sulfur trioxide

Reactivity**:** It is chemically reactive especially upon heating,

Sulfur reacts with metals

BIOCHEMICAL FUNCTION:

- Cellular energy production & metabolism
- Maintaining blood glucose levels
- Protects nerve tissue – Synthesizes neurotransmitters, improves memory
- Antioxidant protection – Scavenges or neutralizes free radicals and Recycles oxidized antioxidants
- Blood flow – Produces both blood clotting factors as well as Anticoagulants.
- Joint health– Production of glycosaminoglycan's (GAGS), Chondroitin sulfateand hyaluronic acid
- Detoxification – By means of conjugation and chelation
- Digestion – Production of hydrochloric acid
- Supports healthy lipoprotein balance – Cholesterol, LDL and HDL

- Proper immune response– Enhancing proliferation of lymphocytes, CytotoxicT cell and NK cells.
- Lungs – Protects against mucous formation in lungs
- Eyes – Decreases cataract development.
- Formation of Skin, Hair and Nails.
- Regulation of DNA replication and transcription.

DIETARY REQUIREMENTS AND SOURCES:

There is no specific dietary requirement for sulfur. Adequate intake of sulfur containing essential amino acid methionine will meet the body needs. Food proteins rich in methionine and cysteine are the sources of sulfur.[28]

METABOLISM OF SULFUR:

- Sulfur is metabolized by all organisms, from bacteria plants and animals.
- Sulfur is reduced or oxidized by organisms in a variety of forms.
- The element is present in proteins, nucleic acid, sulfates, esters of polysaccharides, steroids, phenols, and sulfur-containing co-enzymes.

ROLE OF SULFUR IN RHEUMATIOD ARTHRITIS

- ❖ Sulfasalazine is a drug used in the treatment of rheumatoid arthritis and some other autoimmune condition.
- ❖ It helps with pain and swelling and also slows the progression of arthritis over time.
- ❖ Sulfasalazine is also known as a disease modifying anti rheumatic drug (DMARDs), because it not only decreases the pain and swelling of arthritis, but also prevent damage to joint.
- ❖ It may reduce the risk of long term loss of function.

PROCEDURE :

PREPARATION::

1.The raw drugs are collected and dried in sunshade,it is then pulvarised to make a fine powder(chooranam).

2.Sugar syrup is made with Thaneervittan kilanghu charu(Asparagus racemosus).

GANDHAGA RASAYANAM(INT)


GANDHAGAM


KOOKAINEER


VETTIVER


ELAM


POOLANKILANGU


SATHIPATHIRI


SEERAGAM

MUNTHIRIGAI


SITHIRAMOOLAM


KIRAMBU


KARUNSEERAGA


SANDANAM


THANEERVITAN


AMUKKRA


MILAGU


SATHIKAI


KORAIKILANGU


VASAMBU


VAIVIDANGAM


ARATHAI


OMAM


CHUKKU


POONAIKALI


KUNGUMAPOO

THAKKOL

NILAPANAIKILAN

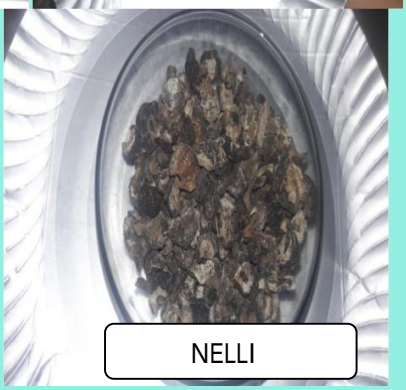
PARANGIPATTAI

SEERAGAM

SATHIPTHRII

MALLI

SADAMANJIL



NELLI

VILAMICHUVER

GANDHAGA RASAYANAM(INT)

3.Sulphur purified with cow's ghee and the chooranam is added to sugar syrup and stirred well.

4.The mixture is allowed to cool and then the honey is added.

5.The above prepared medicine is preserved in a pot and kept in Nerpudam for 10 days.

EXTERNAL MEDICINE :

NAVANATHASITTHA THAILAM

Reference : Theren thaila varga surukkam

(Pg.No:133)

Dose : 25ml for external use

INGREDIENT:

s.no	Tamil name	Botanical name& family	Quantity
1	Thazhuthazhai	Clerodendrum phlomidis linn Verbinaeceae	700gram
2	Erukku	Calotropis gigantea linn Asclepiadaceae	700gram
3	Umattai	Datura metal Solanaceae	700gram
4	Amanakku	Ricinus communis Euphorbiaceae	700gram
5	Kandangkathiri	Solanum surattense burm Solanaceae	700gram

6	Karisalai	Eclipta prostrate linn Asteraceae	700gram
7	Nochi	Vitex nirgundo linn Verbinaceae	700gramI
8	Chukka	Zingiber officinale Scitaminae	17.5gram
9	Thamarai valaiyam	Nelumbo nucifera grertn Nelumbonaceae	17.5gram
10	Kadugu	Brassica juncea hook Crucuferae	17.5gram
11	Kostam	Costus speciosus Zingiberaceae	17.5gram
12	Agil Katta	Aqualaria agallocha Thymaliaceae	17.5gram
13	Vasambhu	Acorus calamus linn Araceae	17.5gram
14	Vellai poondu	Allium sativum linn Liliaceae	17.5gram
15	Thippilli	Piper longum linn Piperaceae	17.5gram
16	Ati Mathuram	Glycyrrhiza glabra linn Fabaceae	17.5gram

17	Vai vilangam	Embellica ribes burm Myrsinaceae	17.5gram
18	Adathoda	Justicia beddomei bennet Acanthaceae	700gram
19	Shadurakalli	Euphorbia antiqurum linn	700gram
20	Koraikilanghu	Cyperus rotundus	17.5gram
21	Arattai	Alpinia galangal linn Zingiberaceae	17.5gram
22	Sandanam	Santalum album linn Santalaeceae	17.5gram
23	Thiripalai	Three myrobalans	17.5gram
24	Induppu	Rock salt	17.5gram
25	Ellu nei Amanakkunei Veppennai	Sesamam indicum Ricinus communis Azadirecta indica	1 padi each (1.8 litre)

DESCRIPTION OF EXTERNAL MEDICINE:

s.no	Tamil name	Botanical name& family	Vernacular name	Chemical composition	Parts used	Suvai	Tanmai	Pirivu	actions
1	Thazhuthazhai	Clerodendrum phlomidislinn Verbinaeceae	Hin-tekar Eng-wind killer San-agnimantha	Apigenin, luteolin, betulin, premnenol, caryophellen,	Root bark, leaf	Kaippu, thuvarppu	Veppam	Karppu	Alterative, astringent
2	Erukku	Calotropis giganteallinn Asclepiadaceae	Hin-madara Eng-madar San-arka	Laurane, b-amyrin, calactin, calotoxin, gigantin, taraxasterol	Root bark, flower, leaf, seed	Kaippu, karam, madhuram	Veppam	Karppu	Anthelmentic, alternative, laxative, stimulant
3	Umattai	Daturametal Solanaceae	Hin-sadadhatura Eng-thorn apple San-dhattura	Daturadiol, hyosine, sitosterol, datumelin, daturilin, norhysine, factusine	Root, flower, leaf, fruit/seed	Kaippu	Veppam	Karppu	Emetic, anti spasmodic, anodyne, narcotic
4	Amanakku	Ricinuscommunis Euphorbiaceae	Hin-erand Eng-castor San-eranda	Ricinine, lupeol, lipids, strearic acid, hydrocyanic & uric acids, tocopherols	Root, leaf, seed oil	Kaippu	Veppam	Karppu	Galactagogue, anti vata, laxative, emollient

5	Kandang kathiri	Solanum surattense burm Solanaceae	Hin-choti kateri Eng-yellow berried nightshade San-kantakari	Diosgenin, solasodine, tomatidienol, solam carpine	Whole plant	Karppu	Veppam	Karppu	Expectorant, diuretic, carminative
6	Karisalai	Eclipta prostrate linn Asteraceae	Hin-bhangra Eng-trailing eclipta San-bhrngaraja	Ecliptal, stigmasterol, heptacosanol, hentriacantol	Whole plant	Kaippu	Veppam	Kaippu	Alterative, emet, purgative, hepic tonic, cholagogue
7	Nochi	Vitex nirgundo linn Verbinaceae	Hin-samhalu Eng-five leaved chaste San-nirgundi	Phenol, dulcitol, vitricine, b-sitosterol, camphene, casticine, orientin	Leaf, root, seed	Kaippu, thuvarppu, karppu	Veppam	Karppu	Alterative, vermifuge, expectorant, astringent, refrigerant
8	Chukka	Zingiber officinale Scitaminae	Hin-sonth Eng-ginger San-sunthi	Citral, paradol, zingiberol, zingerone ,geraniol, camphene	Rhizome	Karppu	Veppam	Karppu	Stimulant, stomachic, carminative
9	Thamarai valaiyam	Nelumbo nucifera grertn Nelumbonaceae	Hin-kamal Eng-lotus San-	Robinin, nuciferin, asmilobine, lirinidine,	Whole plant	Enippu, thuvarppu	Seetam	Enippu	Cooling, astringent, expectorant, sedative, demulce

			kamal	neferine, armepavine, iso liensinine					nt, tonic, nutritive
10	Kadugu	Brassica juncea hook Crucufera e	Hin-badshah rai Eng-,Indian mustard San-rajika	Sinigrin, sinapine, gluconapin	Seed seed oil	Karam	Veppam	Karppu	Emetic, stimulant, vesicant, digestive, diuretic
11	Kostam	Costus speciosus Zingibera ceae	Hin-kebu Eng-costus root San-kebuka	Saponins-A,B,C,D Tigogenin, diosgenin, costusosides	Rhizome	Kaippu, viru virupp u	Veppam	Karppu	Stomachic, expectorant, stimulant, diaphoretic
12	Agil Katta	Aqualaria agallocha Thymalia ceae	Hin-agar Eng-agar wood, san-agaru	Agarospirol, aquillochin, kusunol, lignin, jinkohol, pentosans	Aromatic resinous wood, oil	Karppu, kaippu, enippu	Veppam	Enippu	Stimulant, de obstruent, cholagogue
13	Vasambhu	Acorus calamus linn Araceae	Hin-vacha Eng-sweet flag San-vaca	Acolamone, acorone, azulene, eugenol, telekin, acoric acid, calamendiol, cadalene	Rhizome	Karppu	Veppam	Karppu	Stimulant, stomachic, anti-periodic, emetic, carminative, germicide
14	Vellai poondu	Allium sativum linn	Hin-lahasun Eng-	Allin, arabinose, galactose	Bulb, oil	Karppu	Veppam	Karppu	Carminative, stomachic, tonic,

		Liliaceae	garlic San-rasona	, amino acids, allinase, methianine, asparagic acid, ajoena					alterative, anthelmintic, expectorant
15	Thippilli	Piper longum linn Piperaceae	Hin-pipala Eng-long pepper San-pippali	Caryophyllene, piperine, piplartine, pipercide, sesamin, piper nonaline	Fruit, root	Enippu	Veppam	Enippu	Stimulant, carminative
16	Ati Mathuram	Glycyrrhiza glabra linn Fabaceae	Hin-mulethi Eng-liquorice San-yasti madhu	Glabroli de, glabrine, glycyrrhizin, liquirtin, iso liquirtin	Root	Enippu	Seetam	Enippu	Emollient, demulcent, tonic, laxative, mild-expectorant
17	Vai vilangam	Embellica ribes burm Myrsinaceae	Hin-vai vidang Eng-emebelia San-vidanga	Embelin, christembine, quercitol, homorapanone	Fruits, root	Kaippu	Veppam	Karppu	Anthelmintic, carminative, stomachic, stimulant
18	Adathoda	Justicia beddomei bennet Acanthaceae	Hin-arusa Eng-malabar nut San-vasaka	Adathodic acid, kaemferol, carotene, vasicinol, anisotine, adathodine	Leaf, root, bark, flower	Kaippu	Veppam	Karppu	Anti-spaamodic, expectorant, germicide, diuretic

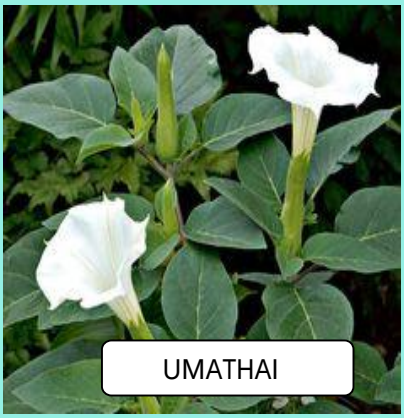
19	Shadurakalli	Euphorbia antiquurum linn	Hin-sehund Eng-quadrangular spurge San-mahasnuhi		Latex, root bark	karppu	veppam	karppu	
20	Koraikilanghu	Cyperus rotundus	Hin mutha Eng- nut grass, san-musta	Cineol, copaene, mustakone, kobusone, sugenol, copadiene	Tubers	Kaippu	Seetam	Kaippu	Astringent, stimulant, diuretic, demulcent, vermifuge
21	Arattai	Alpinia galangal linn Zingiberaceae	Eng-galangal the lesser San-rasna	Galagin, kaempferide, diaryl-heptanoids	Root	Kaarppu	Veppam	Karppu	Expectorant, febrifuge, stomachic
22	Sandanam	Santalum album linn Santalaceae	Hin-chandan Eng-sandal wood San-chandana	Santanone, teresantalic acid, b-santene & santalenes, nor-tricycle ekasantala	Oil, whole plant	Kaippu, siruthuvarppu	Tatpam, veppam	Enippu karppu	Alterative, diuretic, diaphoretic, stimulant, disinfectant, astringent, cooling
23	Thiripalai	Three myrobalans	San-thriphala	Gallic acud Chebulagic acid Chebulinic acid	fruit	thuvarppu	veppam	karppu	astringent

24	Induppu	Rock salt	Cynthavam chindooram	Cream of tartar	salt				Laxative Purgative Carminative Diuretic Stomachic

PROCEDURE:

- Roots are collected and dried in sun shade and it pulvarised to make a powder then decoction is prepared with this powder.
- Oil are added to the above decoction.
- Raw drugs are collected and dried in sun shade and pulvarised to powder form and made into Karkam.
- Karkam is added to the above preparation and boiled in low flame to required consistency and collected in a pot sealed with mud pasted cloth(seelai) is kept in nerpudam for 9 days.(THERAN THAILA VARGA SURUKAM)

NAVANATHASITTHA TAILAM(EXT)




AGIRKATTAI


AMMANAKU NEI


ERRUKU


VAIVIDANGAM


ATHIMATHURAM


VEPPENNAI


NAVANATHASITTHA TAILAM(EXT)

RESULTS & OBSERVATIONS

RESULTS AND OBSERVATION

Results and observation are tabulated under the following headings,

1. Age Distribution
2. Sex Distribution
3. Gunam
4. Body constitution
5. Paruva Kaalam
6. Nilam
7. Diet
8. Occupational Distribution
9. Socio economic status
10. Duration of illness
11. Onset of Symptoms
    a. Derangement in Vatham
    b. Derangement in Pitham
    c. Derangement in Kabam
12. Gnanenthriyam
13. Kanmenthiriyam
14. Udalthathukkal
15. Envagai thervugal
    A) Naadi
    B) Neikuri
16. Clinical Features

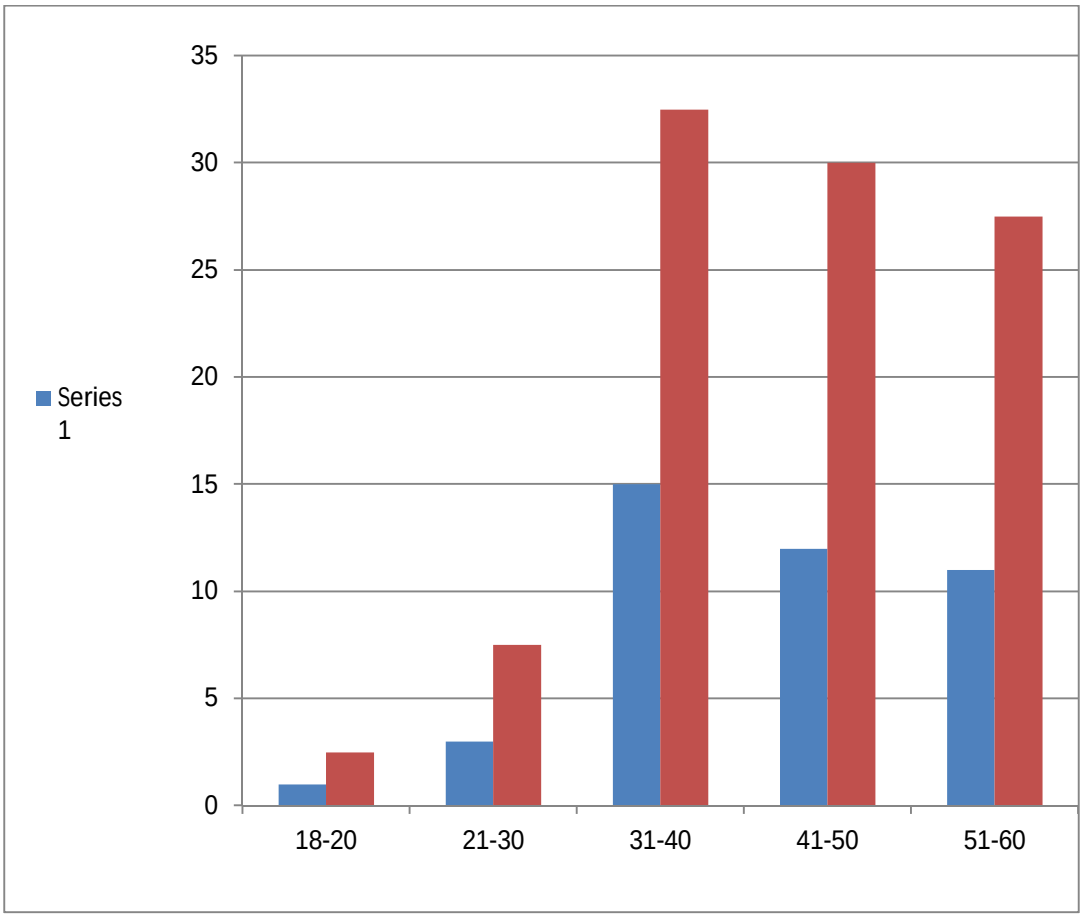
17. Deformities

18. Involvement of Joints

19. Results

1. AGE DISTRIBUTION:

AGE [YEAR]	**NUMBER OF CASES**	**PERCENTAGE**
18-20	1	2.5%
21-30	**3**	**7.5%**
31-40	**15**	**32.5%**
41-50	**12**	**30%**
51-60	11	27.5%
Total	40	100%



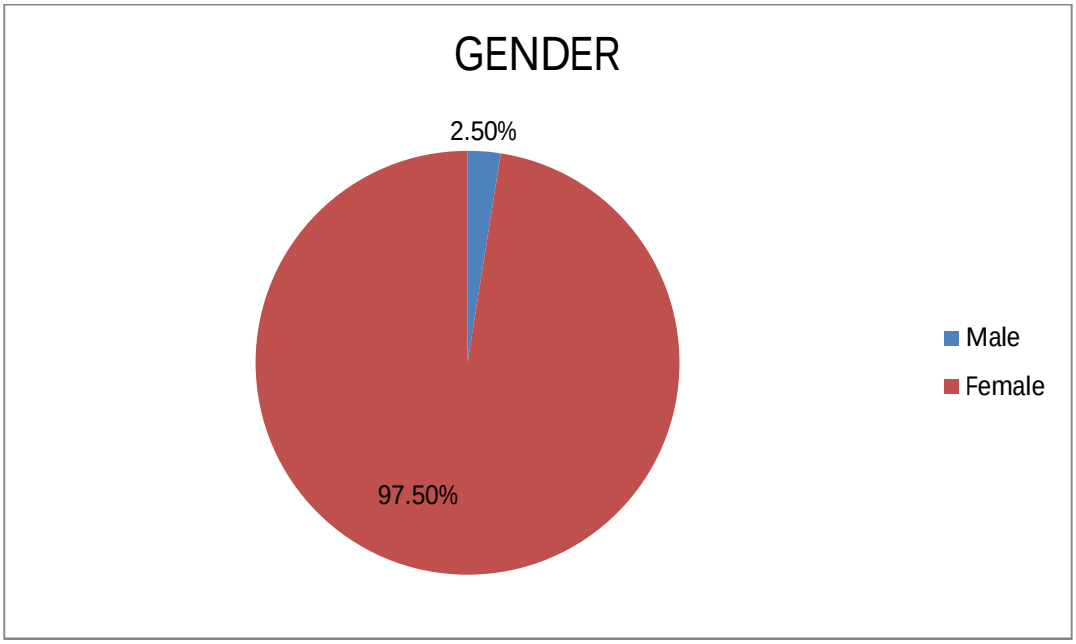
OBSERVATION:

The percentage of the age group18-20 was 2.5%, 21-30 was 7.5%, 31-40 was 32.5%, 41-50 was 30% , 51-60 was 27.5%.

GENDER:

GENDER	NUMBER OF CASES	PERCENTAGE
Male	1	2.5%
Female	39	97.5%
Total	40	100%

2. SEX DISTRIBUTION:

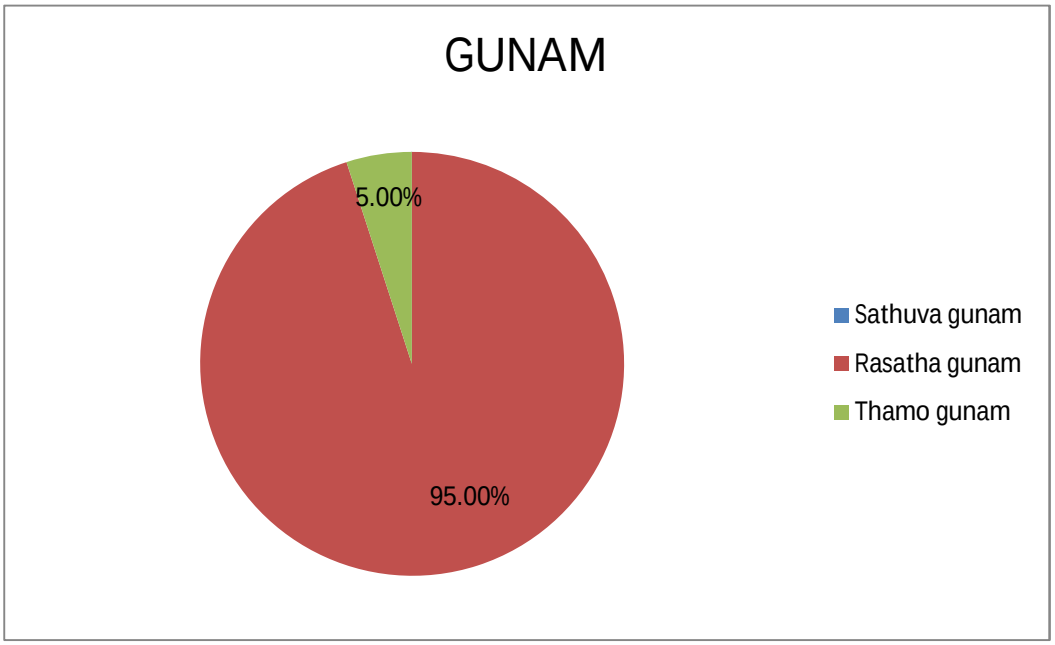


OBSERVATION:

Among the 40 patients selected 97.5% were females and 2.5% were males.

3. **GUNAM:**

GUNAM	**NUMBER OF CASES**	**PERCENTAGE**
Sathuva gunam	-	-
Rasatha gunam	38	95%
Thamo gunam	2	5%
Total	40	100%

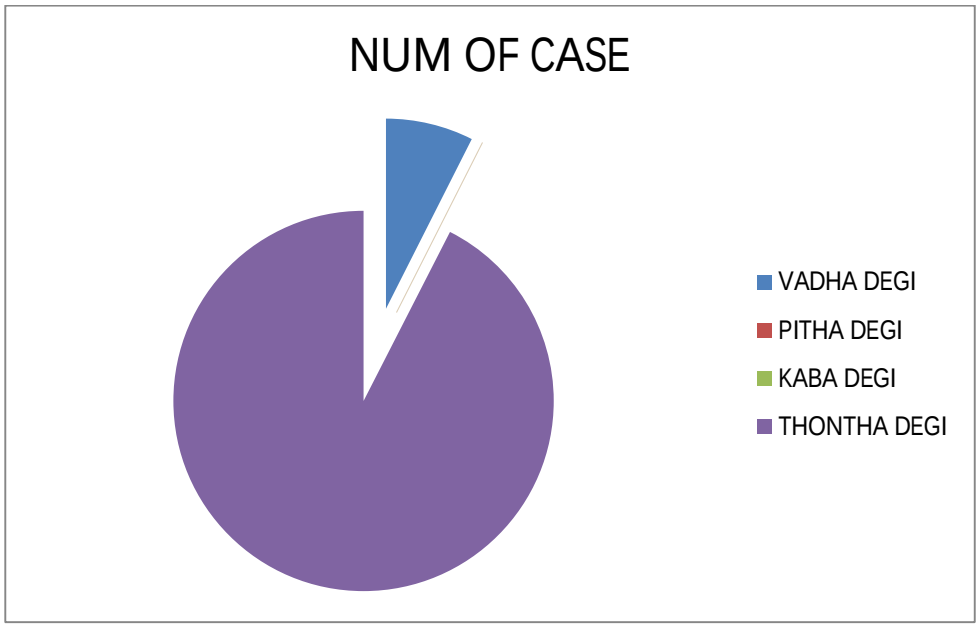


OBSERVATION:

Among the 40 cases, 38 cases were found to possess rasatha gunam and 2 cases were found to possess thamo gunam.

\4. **BODY CONSTITUTION:**

CONSTITUTION OF THE BODY	**NUMBER OF CASES**	**PERCENTAGE**
Vatha thegi	3	7.5%
Pittha thegi	-	-
Kabha thegi	-	-
Thontha thegi	37	92.5%
Total	40	100%

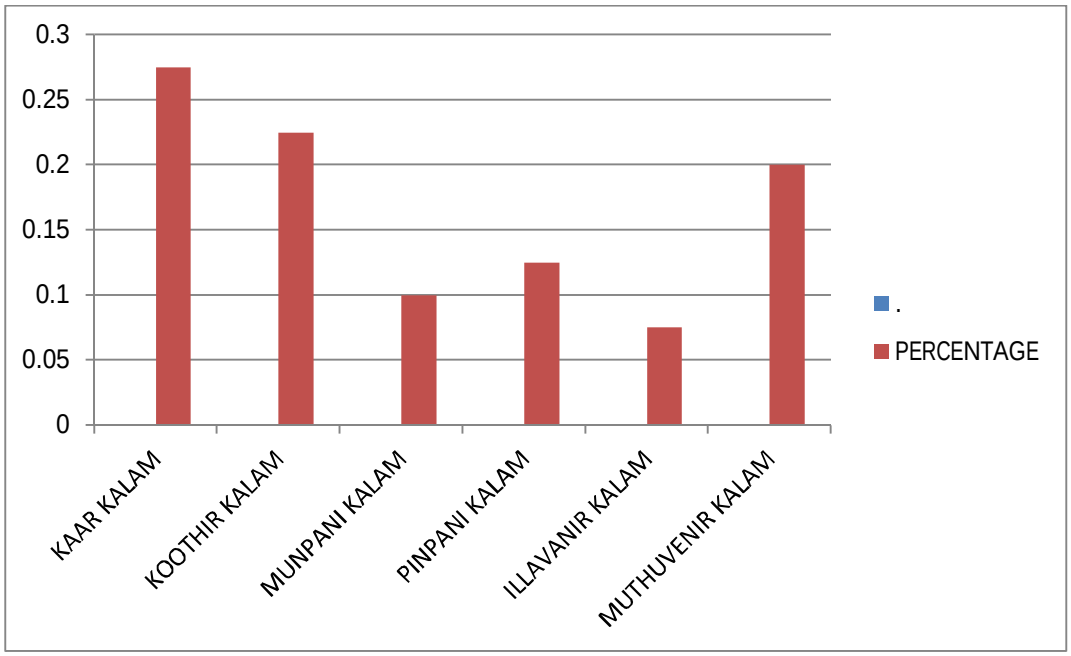


OBSERVATION:

In the study 3 cases belongs to vadha thegi and 37 cases belongs to thontha thegi.

5.**PARUVAKAALAM:**

PARUVAKAALAM	**NUMBER OF CASES**	**PERCENTAGE**
Kaarkaalam	11	27.5%
Koothirkaalam	9	22.5%
Munpanikalam	4	10%
Pinpanikaalam	5	12.5%
Ilavenilkaalam	3	7.5%
Mudhuvenilkaalam	8	20%
Total	40	100%

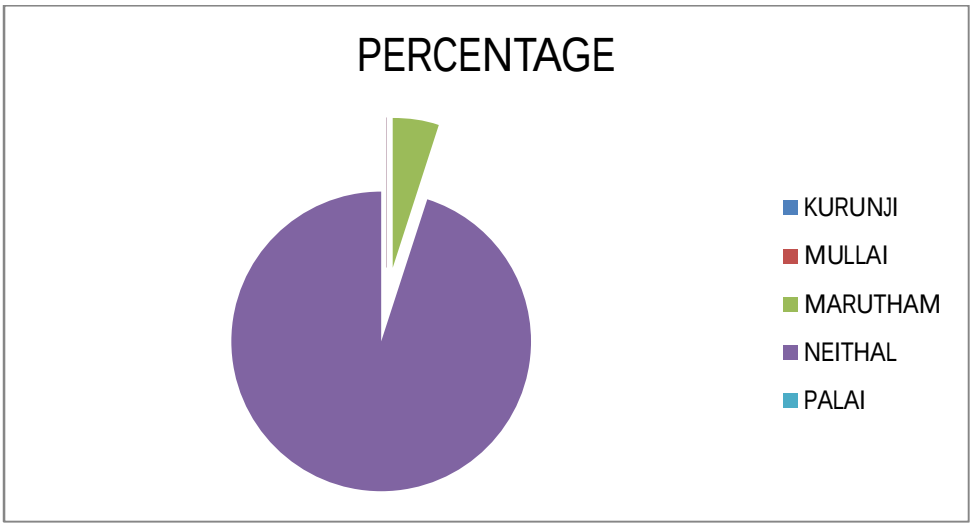


OBSERVATION:

Among the 40 cases, 27.5% of cases were admitted to the trail in kaarkaalam,22.5% of cases in koothirkalam and 10% cases in munpanikalam,12.5% in pinpani kalam 7.5% cases in ilavenilkalam,20% in mudhuvenilkaalam.

6.**NILAM:**

NILAM	**NUMBER OF CASES**	**PERCENTAGE**
Kurinji	-	-
Mullai	-	-
Marudham	2	5%
Neithal	38	95%
Palai	-	-
Total	40	100%

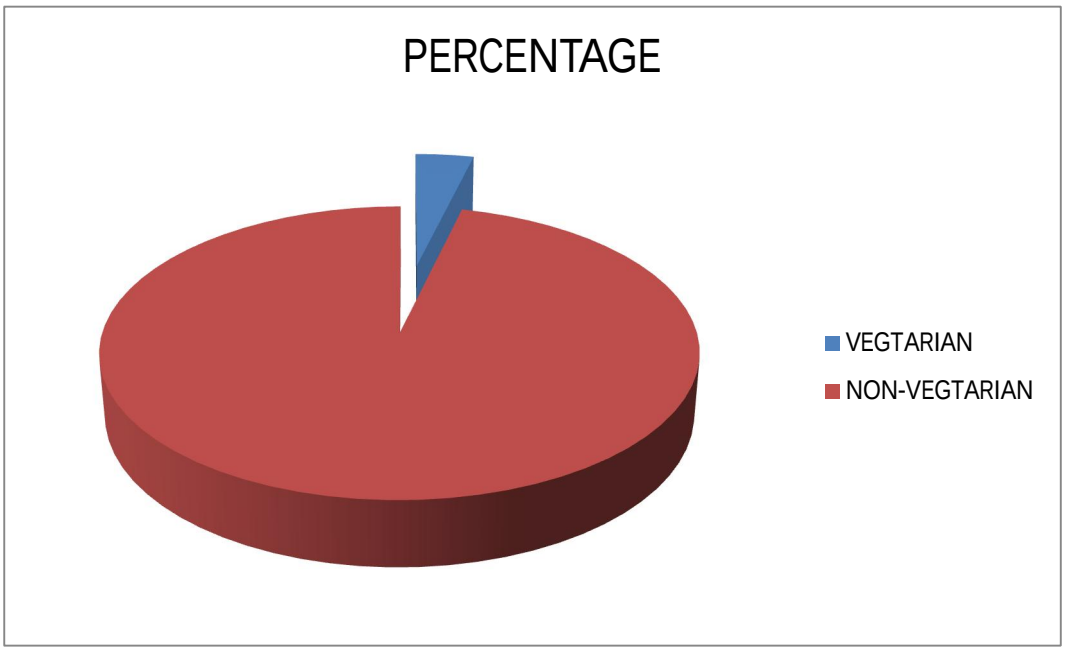


OBSERVATION:

Among the 40 cases, 5% cases were from marutha nilam and the remaining 95% cases from neithal nilam.

7.**DIET:**

DIET	**NUMBER OF CASES**	**PERCENTAGE**
Vegetarian	5	12.5%
Non vegetarian	35	87.5%
Total	40	100%

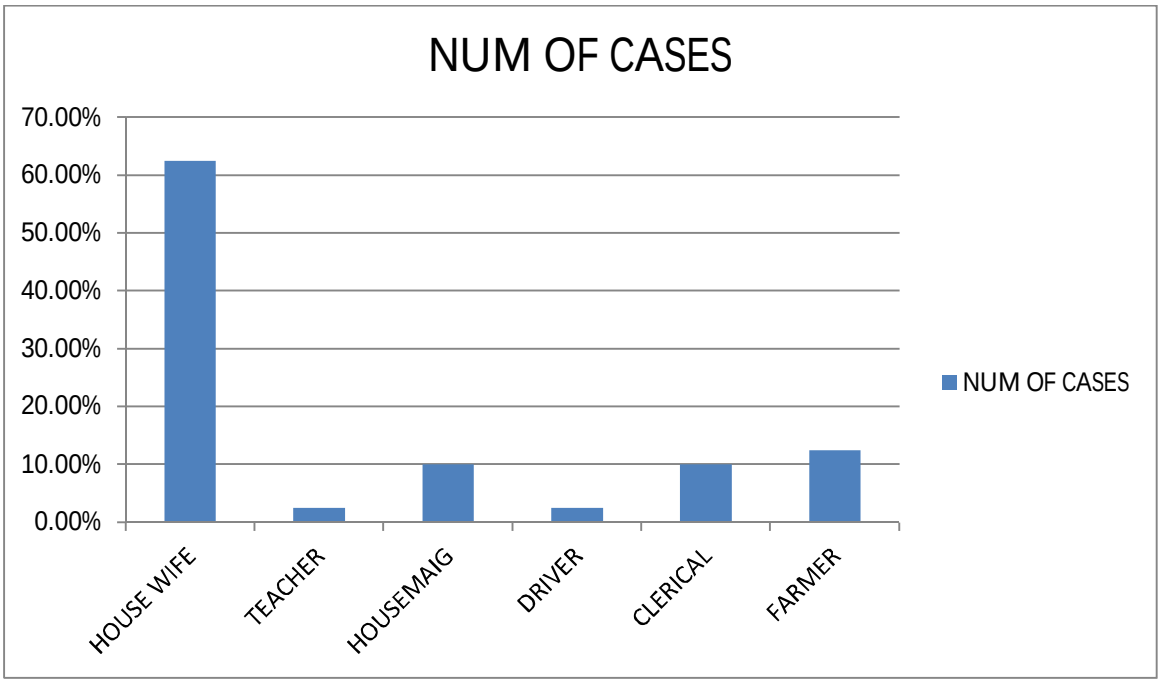


OBSERVATION:

Among the 40 cases, 87.5% were non vegetarian and 12.5% were vegetarian.

8.OCCUPATIONAL DISTRIBUTION:

OCCUPATION	**NUMBER OF CASES**	**PERCENTAGE**
House wife	25	62.5%
Teacher	1	2.5%
Housemaid	4	10%
Driver	1	2.5%
Clerical	4	10%
Farmer	5	12.5%
Total	40	100%

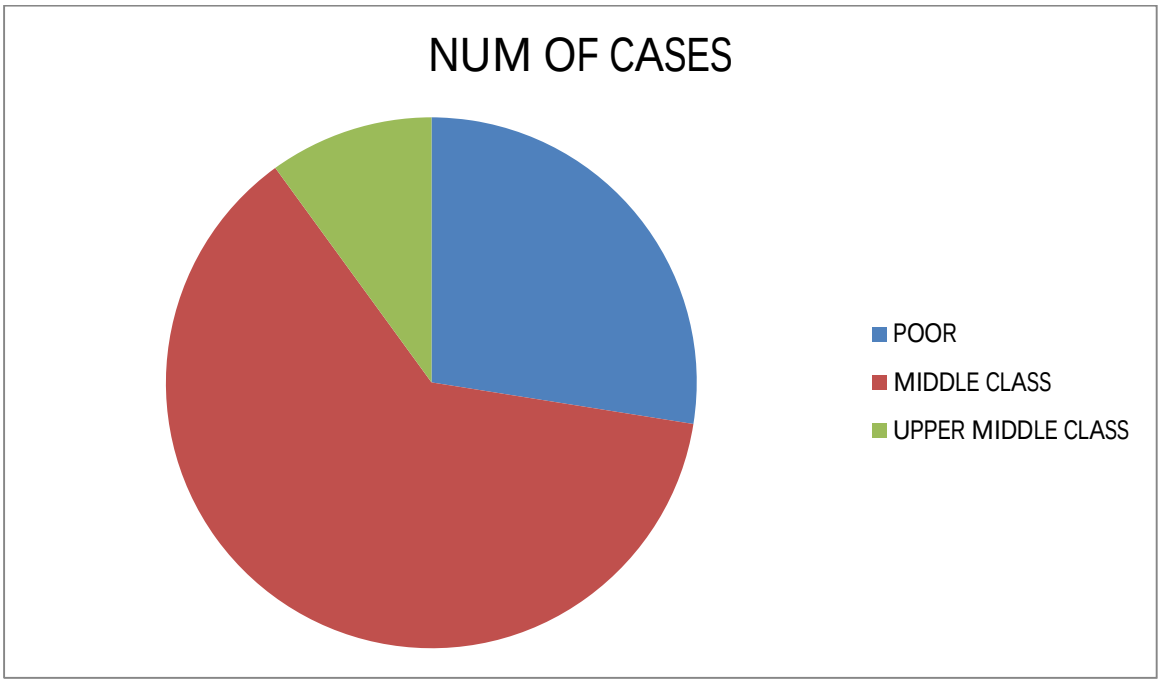


OBSERVATION:

Among the 40 cases, 62.5% were housewives, 12.5% were farmers, 10% were clericals and housemaids, 2.5% were teachers and drivers.

9. **SOCIO-ECONOMIC STATUS:**

SOCIO ECONOMIC STATUS	NUMBER OF CASES	PERCENTAGE
Poor	11	27.5%
Middle class	25	62.5%
Upper middle class	4	10%
Total	40	100%



OBSERVATION:

The incidence of the disease was found in 62.5% in middle class, 27.5% in poor and 10% in upper middle class.

10.**DURATION OF ILLNESS:**

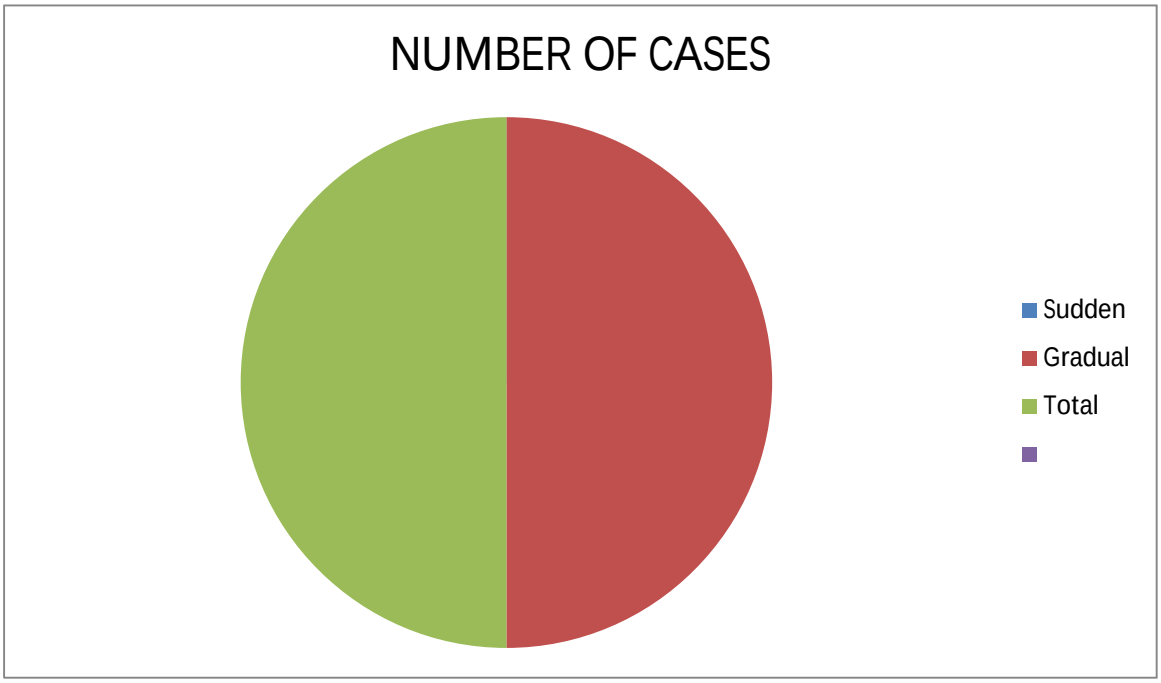
DURATION OF ILLNESS	NUMBER OF CASES	PERCENTAGE
3 months – 6 months	7	17.5%
6 months- 1 year	8	20%
1year -2yrs	11	27.5%
2-5 years	10	25%
5-10 years	3	7.5%
more than 10 years	1	2.5%

OBSERVATION:

Among the 40 cases, the duration of the illness at the time of study 27.5% were 1yr-2yrs, 25% were 2-5 yrs, 20% were 6months- 1yr, 17.5% were 3months- 6 months, 7.5% were 5-10 yrs, 2.5% were more than 10 yrs.

11. **ONSET OF DISEASE:**

MODE OF ONSET	NUMBER OF CASES	PERCENTAGE
Sudden	-	-
Gradual	40	100%
Total	40	100%

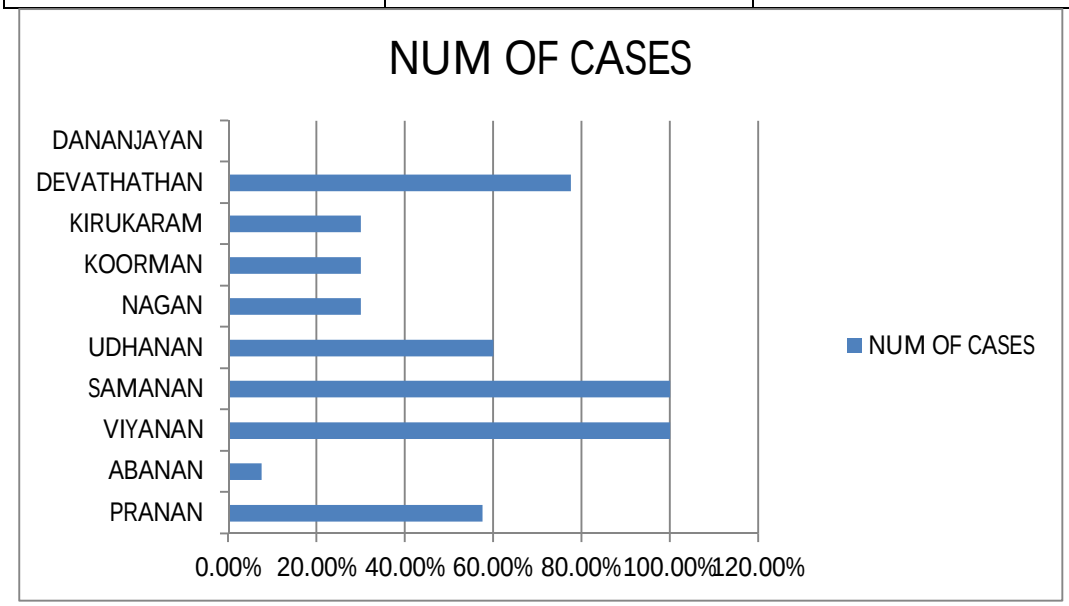


OBSERVATION:

All the 40 cases are of gradual onset.

12.**DISTURBANCES IN VATHAM:**

VATHAM	NUMBER OF CASES	PERCENTAGE
Praanan	23	57.5%
Abaanan	3	7.5%
Samaanan	**40**	**100%**
Viyaanan	**40**	**100%**
Udhaanan	24	60%
Naagan	12	30%
Koorman	12	30%
Kirukaran	12	30%
Dhevathathan	**31**	**77.5%**
Dhananjeyan	-	-

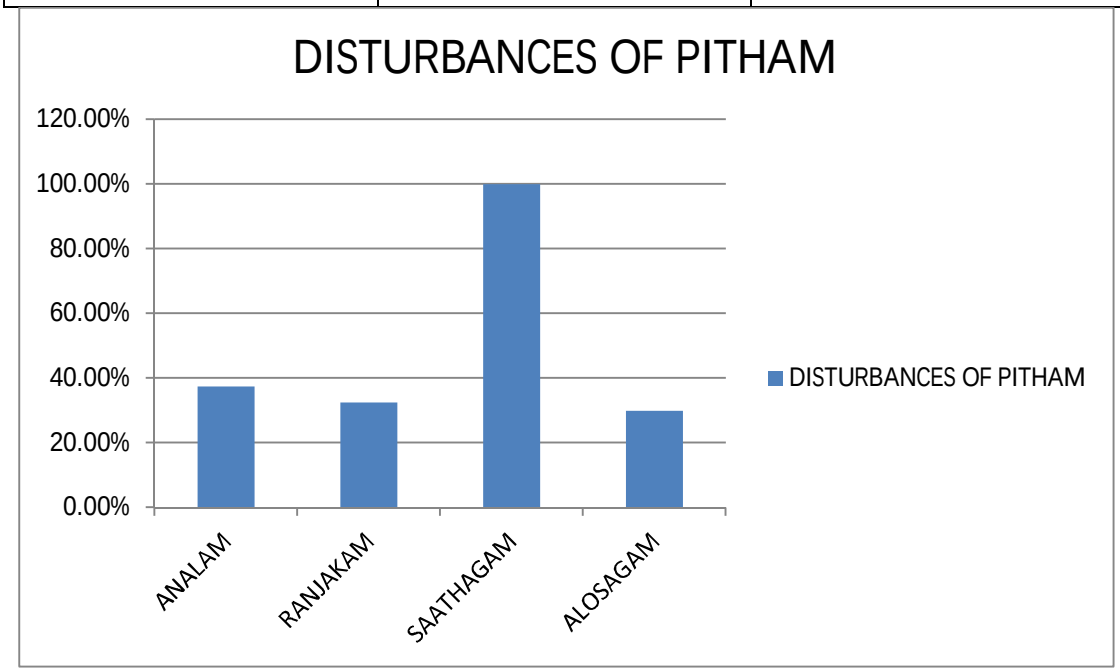


OBSERVATION:

Samaanan were affected in 100% of cases, dhevathathan was affected in 77.5% cases, praanan, udhaanan were affected in 60% of cases, naagan, koorman, kirukaran, were affected in 30% of cases. Abaanan was affected in 10% of cases.

13.**DISTURBANCES IN PITTAM:**

PITHAM	NUMBER OF CASES	PERCENTAGE
Analam	15	37.5%
Ranjakam	13	32.5%
Saathagam	40	100%
Alosagam	12	30%
Total	40	100%

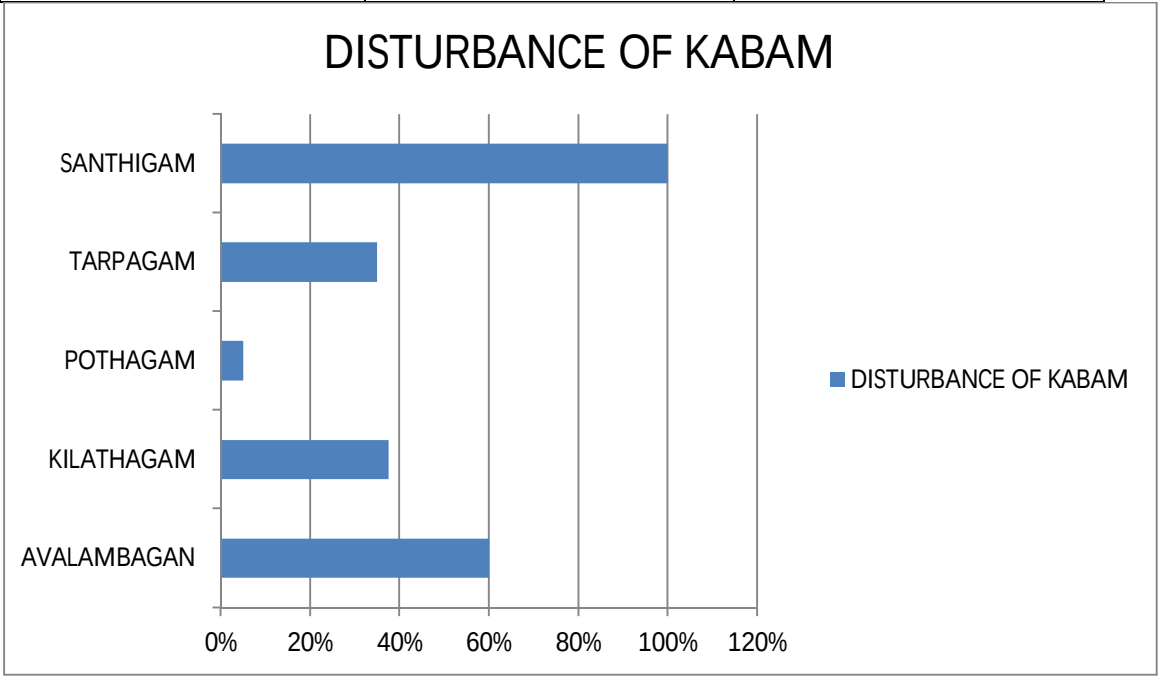


OBSERVATION:

Among the 40 cases, saathagam was affected in 100%cases. Analam was affected in 37.5% of cases, ranjagam was affected in 32.5% cases, alosagam was affected in 30% cases, prasagam was affected in 2.5% cases.

14.DISTURBANCES IN KABAM:

KABAM	NUMBER OF CASES	PERCENTAGE
Avalambakam	24	60%
Kilethagam	15	37.5%
Pothagam	2	5%
Tharpagam	14	35%
Santhigam	40	100%

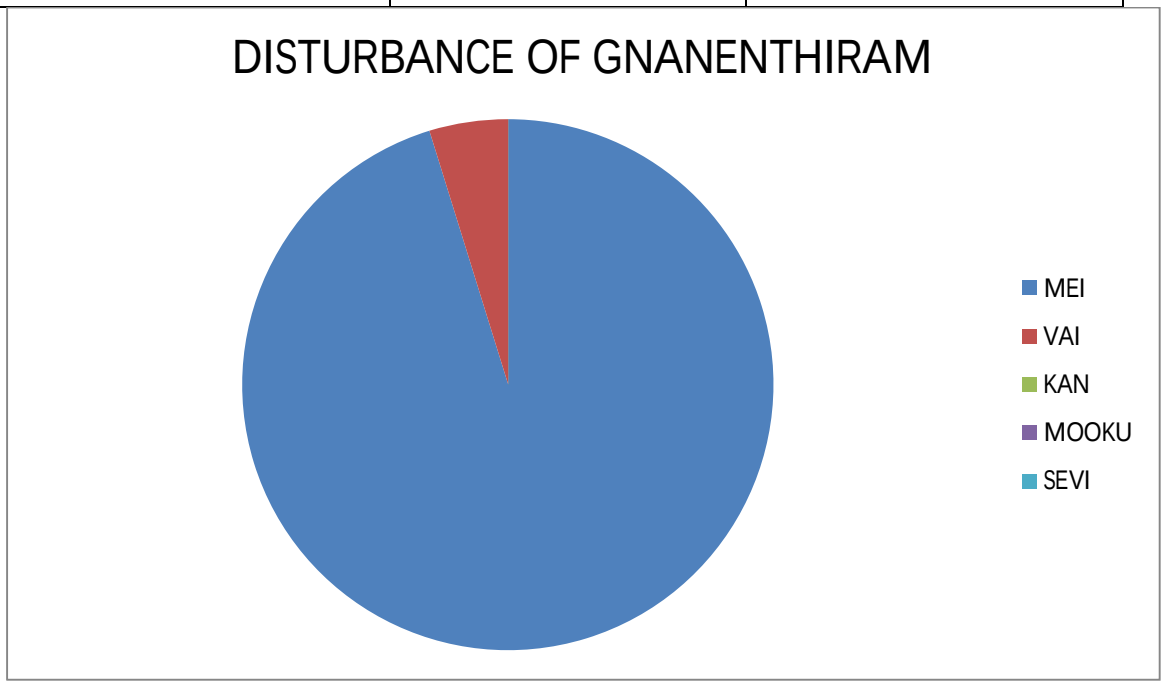


OBSERVATION:

Among the 40 cases, santhigam was affected in 40 cases, avalambagam was affected in 60% cases, kilethagam was affected in 37.5% cases, tharpagam was affected in 35% cases, pothagam was affected in 5% cases.

15.DISTURBANCES IN GNANENTHIRIYAM:

GNANENTHIRIYAM	NUMBER OF CASES	PERCENTAGE
Mei	40	100%
Vai	2	5%
Kan	-	-
Mooku	-	-
Sevi	-	-

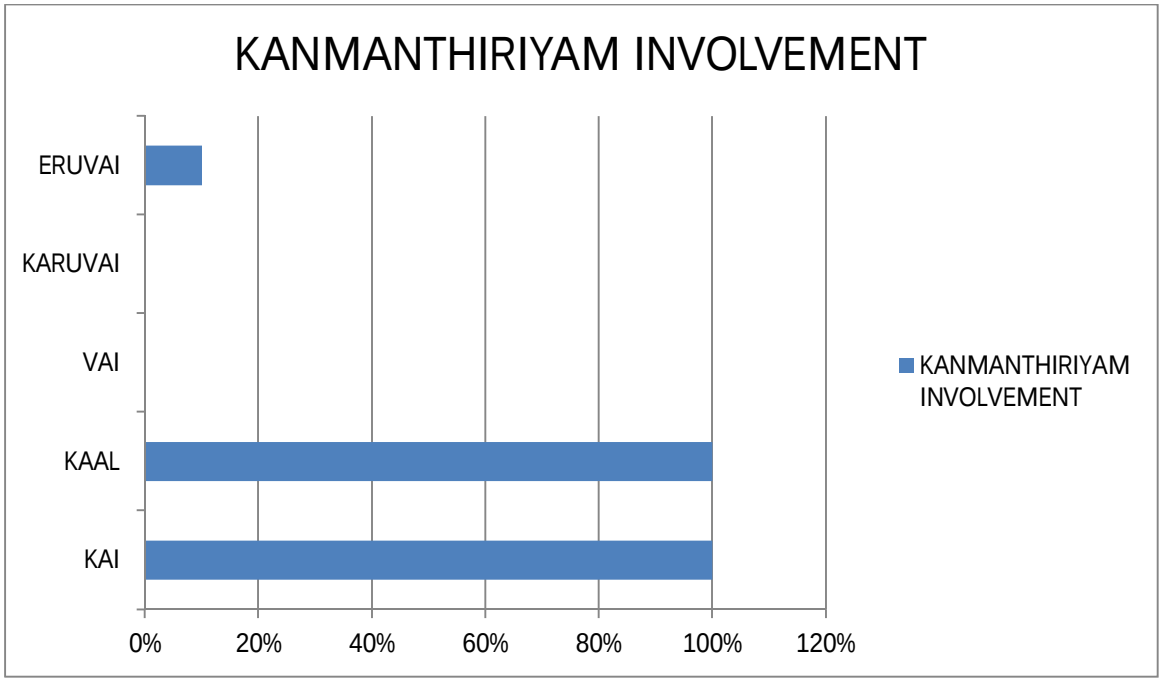


OBSERVATION:

Among the 40 cases all mei was affected in 100%cases, kan was affected in 30% cases due to age factor and vai was affected in 5% cases.

16.**KANMENTHIRIYAM INVOLVEMENT:**

KANMENTHIRIYAM	NUMBER OF CASES	PERCENTAGE
Kai	40	100%
Kaal	40	100%
Vai	-	-
Karuvaai	-	-
Eruvaai	4	10%

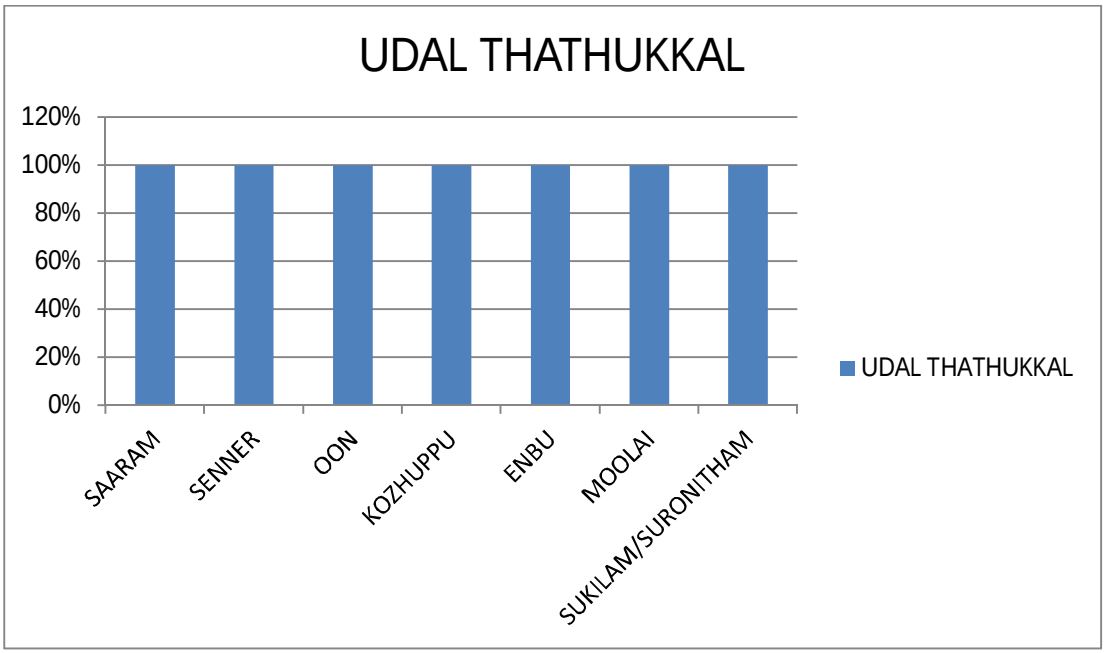


OBSERVATION:

Among the 40 cases, kai kaal are affected in all 100% cases due to pain, swelling, restriction of movements,etc. eruvaai was affected in 10% of cases due to constipation, vaai was affected in 5% of cases due to stomatitis.

17.**UDAL THATHUKKAL:**

UDAL THATHUKKAL	**NUMBER OF CASES**	**PERCENTAGE**
Saaram	40	100%
Senner	40	100%
Oon	40	100%
Kozhuppu	40	100%
Enbu	40	100%
Moolai	40	100%
Sukkilam / suronitham	-	-

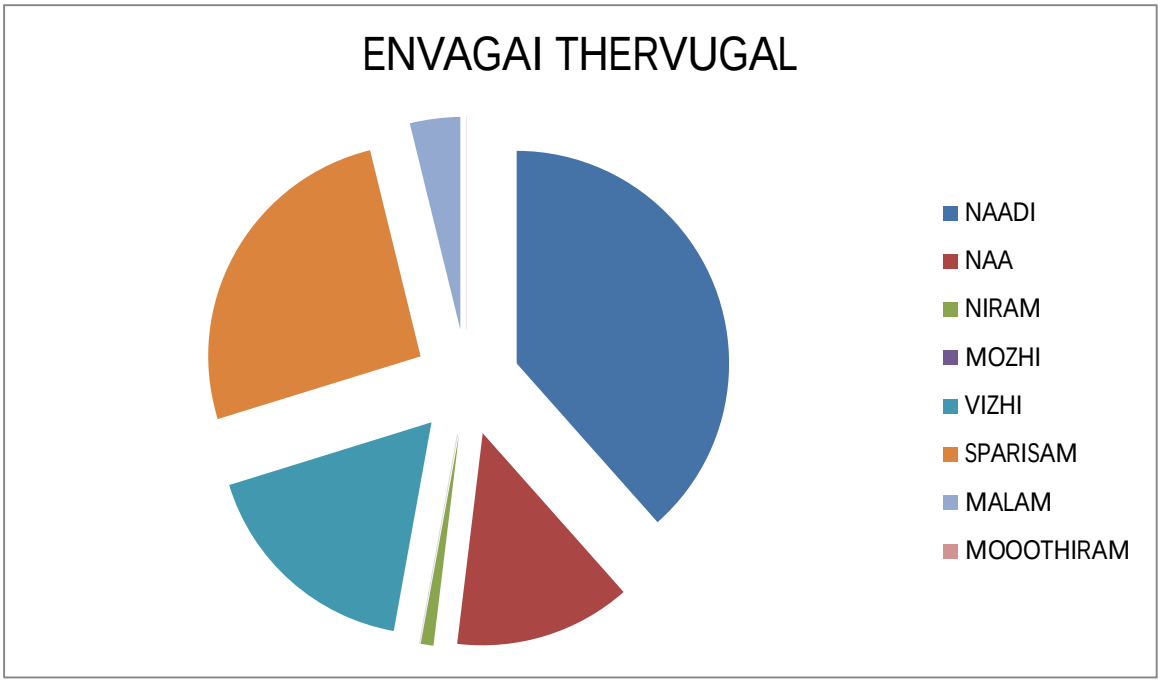


OBSERVATION:

Saaram, seneer, oon, kozhuppu, enbu, moolai were affected in all the 40 cases.

18.**ENVAGAI THERVUGAL:**

ENVAGAI THERVUGAL	NUMBER OF CASES	PERCENTAGE:
Naadi	40	100%
Naa	14	35%
Niram	1	2.5%
Mozhi	-	-
Vizhi	18	45%
Sparisham	**27**	**67.5%**
Malam	4	10%
Mootiram	-	-

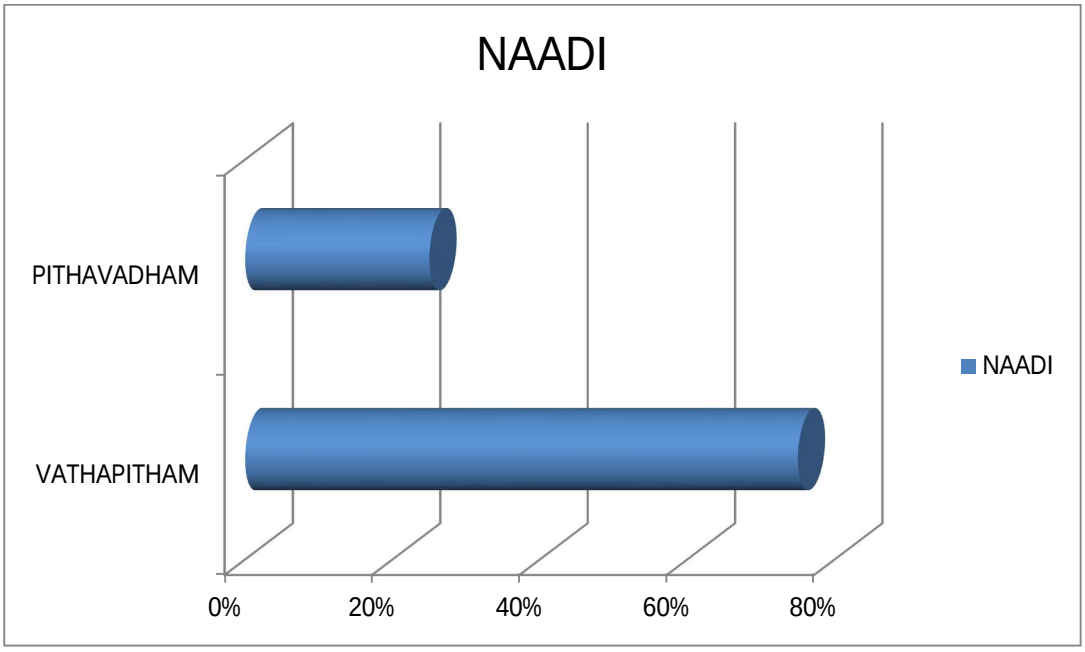


OBSERVATION:

In all the cases, examination of naadi, naadi revealed thontham of vatham. Sparisam was affected in 67.5% cases due to warmth felt in the affected joints. Vizhi was affected in 45% cases , naa was affected in 35% of cases, and mala was affected in 10% cases, niram was affected in 2.5% .

19. NAADI:

NAADI	NUMBER OF CASES	PERCENTAGE
Vathapitham	30	75%
Pitha vatham	10	25%
Total	40	100%

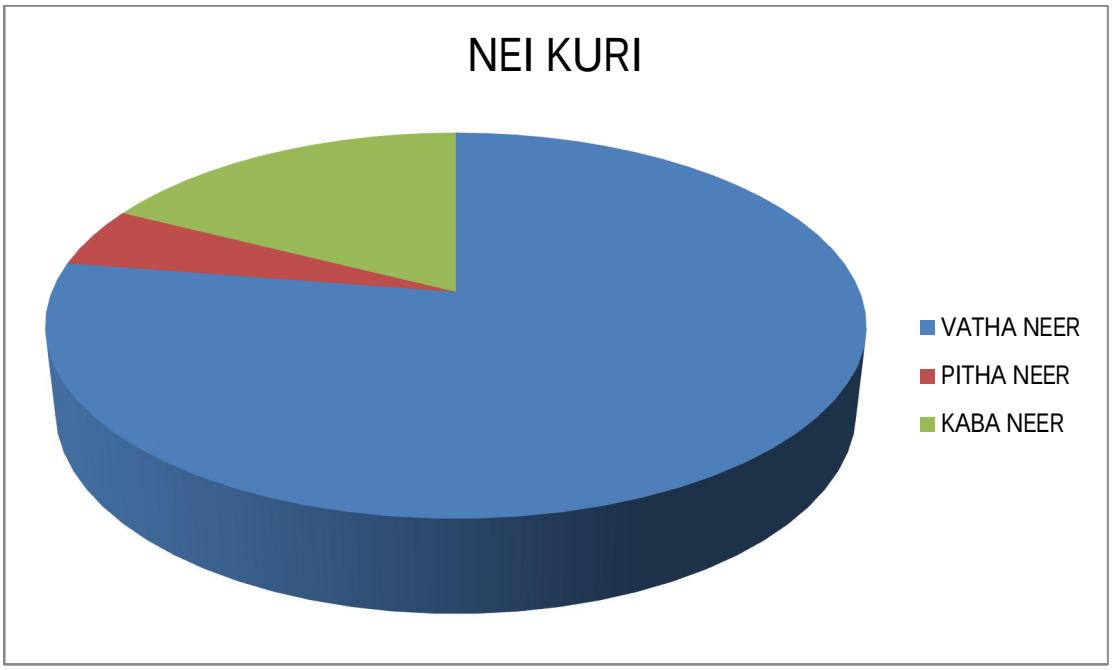


OBSERVATION:

Among the 40 cases, 75% of the cases were revealed vathapitha naadi, 25% of the cases were revealed pithavatha naadi.

20. **NEIKKURI:**

SPREADING PATTERNS	NUMBER OF CASES	PERCENTAGE
Vathaneer	31	77.5%
Pithaneer	2	5%
Kabaneer	7	17.5%
total	40	100%



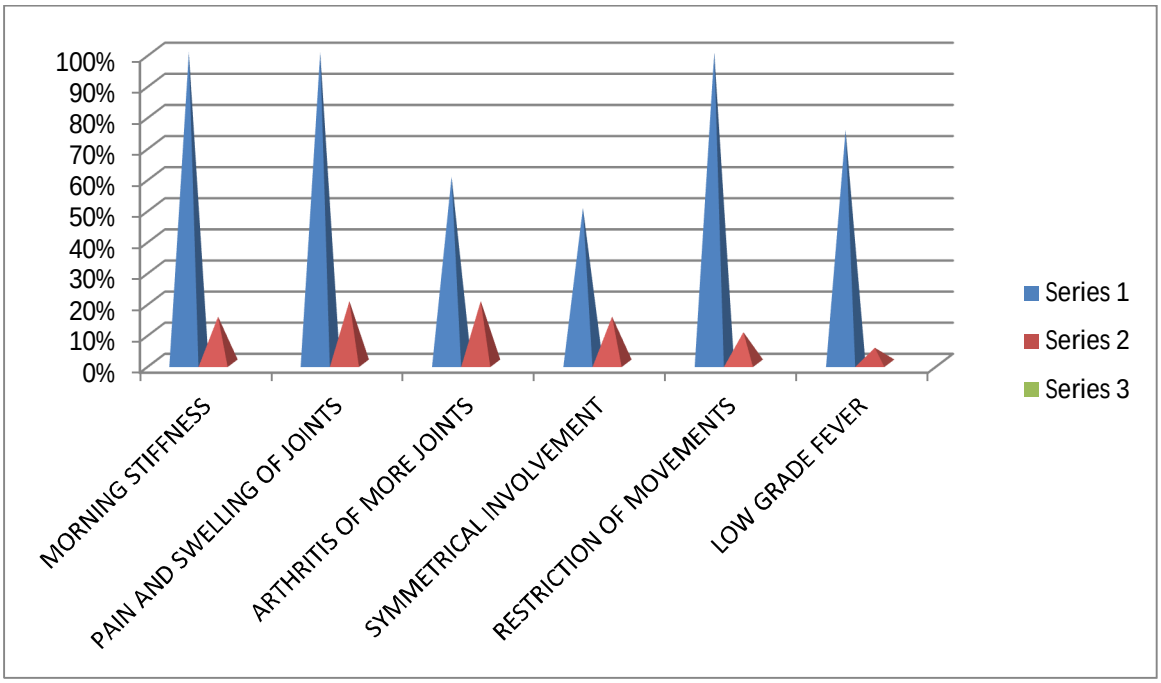
OBSERVATION:

Among the 40 cases, 77.5% of the cases showed vathaneer, 17.5% of the case showed kabaneer, 5% of the cases showed pithaneer.

21.CLINICAL SYMPTOMS [BEFORE & AFTER] :

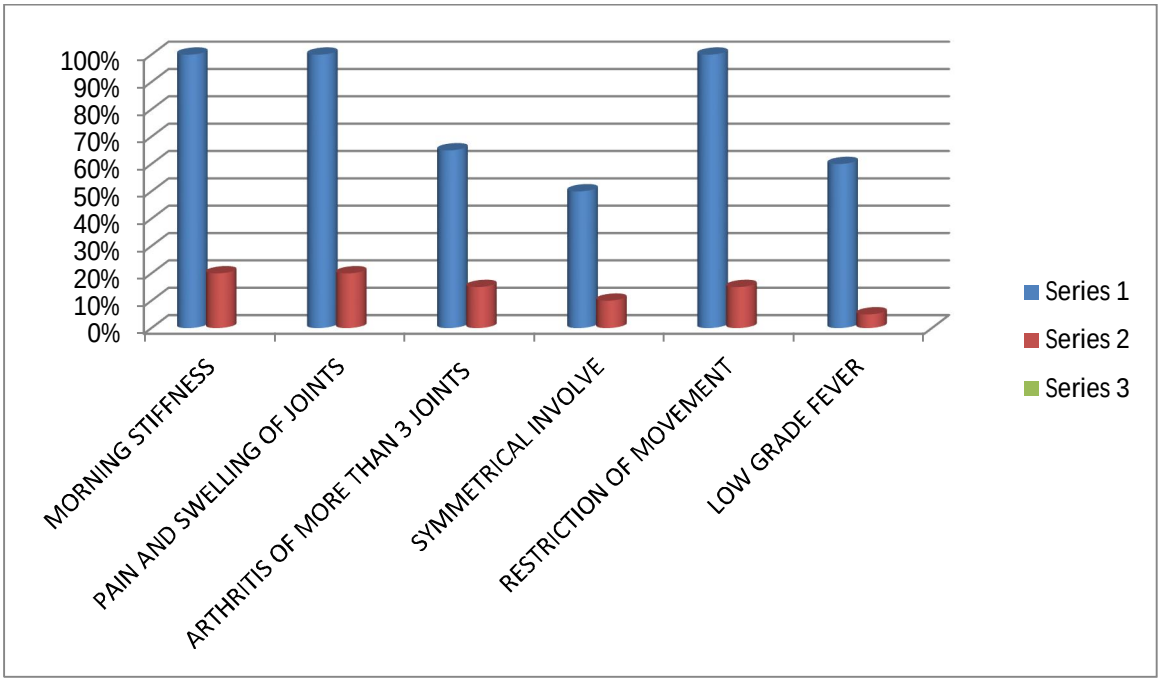
S.NO	CLINICAL FEATURE	BEFORE TREATMENT		AFTER TREATMENT	
		SUBJECTS	PERCENTAGE	SUBJECTS	PERCENTAGE
1	MORNING STIFFNESS	20	100%	3	15%
2	PAIN AND SWELLING OF JOINTS	20	100%	4	20%
3	ARTHRITIS OF 3orMORE JOINTS	12	60%	4	20%
4	SYMMETRICAL INVOLVEMENT	10	50%	3	15%
5	RESTRICTION OF MOVEMENTS	20	100%	2	10%
6	LOW GRADE FEVER	15	75%	1	5%

IMPROVEMENT FOR GROUP – I SUBJECTS



IMPROVEMENT FOR GROUP – II SUBJECTS

S.NO	CLINICAL FEATURE	BEFORE TREATMENT		AFTER TREATMENT	
		SUBJECTS	PERCENTAGE	SUBJECTS	PERCENTAGE
1	MORNING STIFFNESS	20	100%	4	20%
2	PAIN AND SWELLING OF JOINTS	20	100%	4	20%
3	ARTHRITIS OF MORE THAN 3 JOINTS	13	65%	3	15%
4	SYMMETRICAL INVOLVEMENT	10	50%	2	10%
5	RESTRICTION OF MOVEMENT	20	100%	3	15%
6	LOW GRADE FEVER	12	60%	1	5%



OBSERVATION:

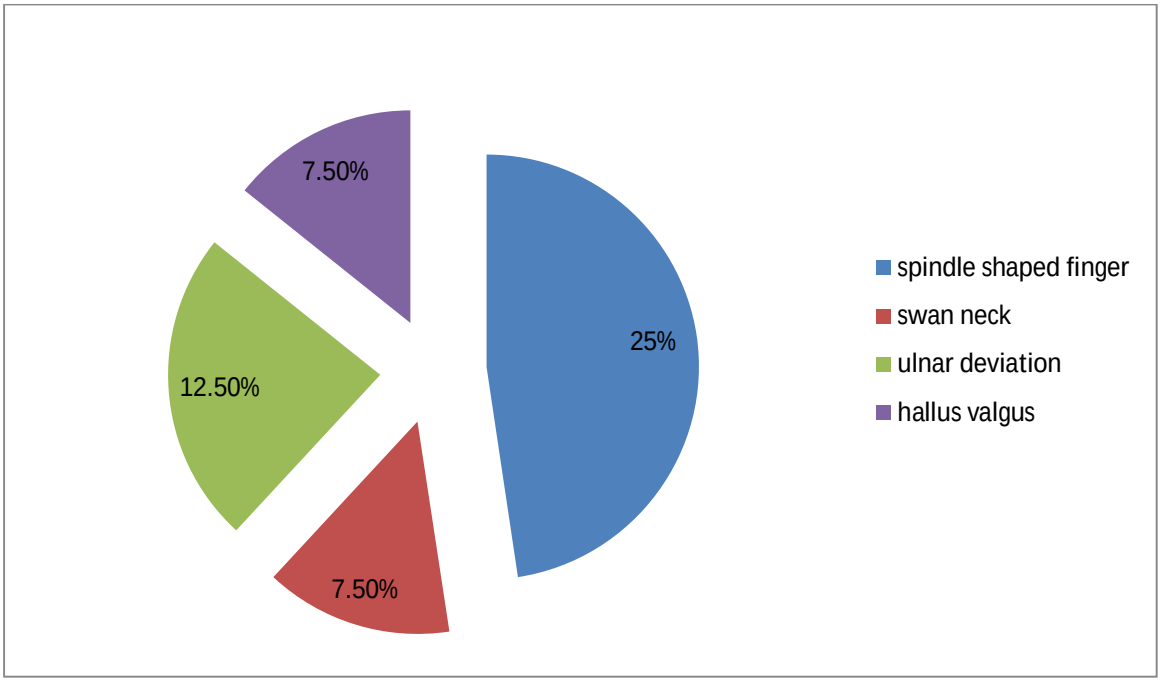
Pain, swelling of joints, morning stiffness, tenderness, restricted movements and warmth were found in all 40 cases before treatment.

After treatment there was a considerable reduction in all symptoms particularly in pain, morning stiffness, swelling of joints, tenderness, restricted movements and warmth.

After treatment there was a complete relief in the symptoms like low grade fever, sleeplessness and loss of appetite.

22.**DEFORMITY:**

DEFORMITY	NUMBER OF CASES	PERCENTAGE
Spindle shaped fingers	7	25%
Swan neck	3	7.5%
Z shaped	-	-
Ulnar deviation of hand	5	12.5%
Hallus valgus	3	7.5%

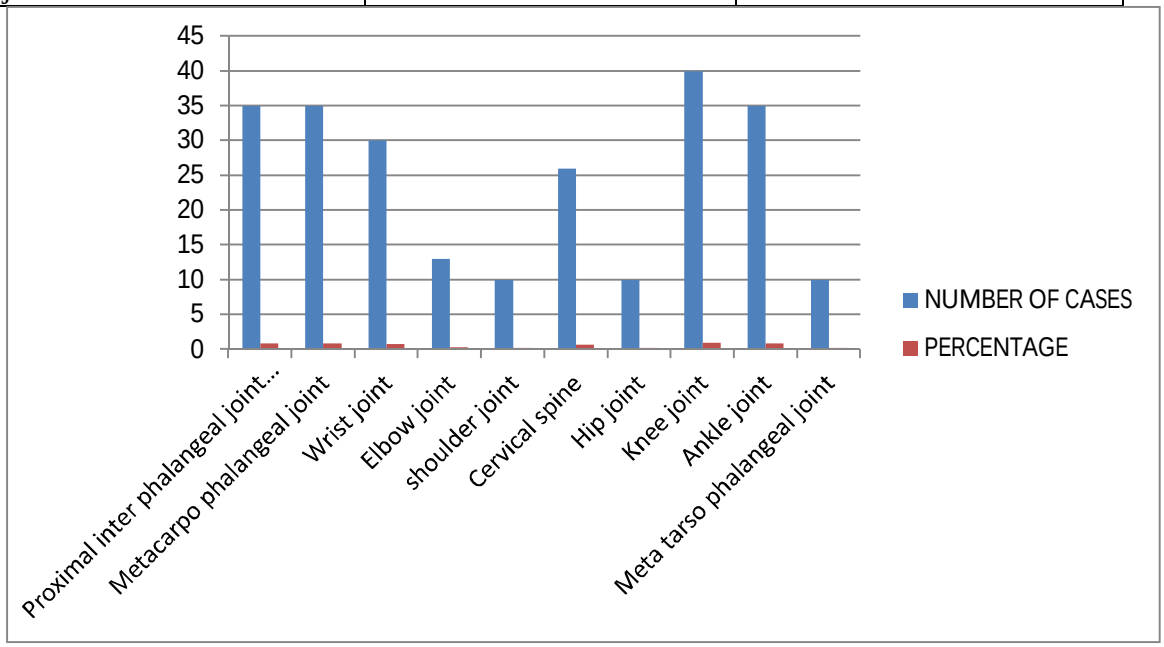


OBSERVATION:

Among the 40 cases, 25%cases had spindle shaped fingers, 12.5% cases had ulnar deviation of hand, 7.5% cases had hallus valgus and 7.5% cases had swan neck deformity.

23.**INVOLVEMENT OF JOINTS:**

JOINTS INVOLVED	NUMBER OF CASES	PERCENTAGE
Proximal inter phalangeal joint of hand	35	87.5%
Metacarpo phalangeal joint	35	87.5%
Wrist joint	30	75%
Elbow joint	13	32.5%
shoulder joint	10	25%
Cervical spine	26	65%
Hip joint	10	25%
Knee joint	40	100%
Ankle joint	35	87.5%
Meta tarso phalangeal joint	10	25%

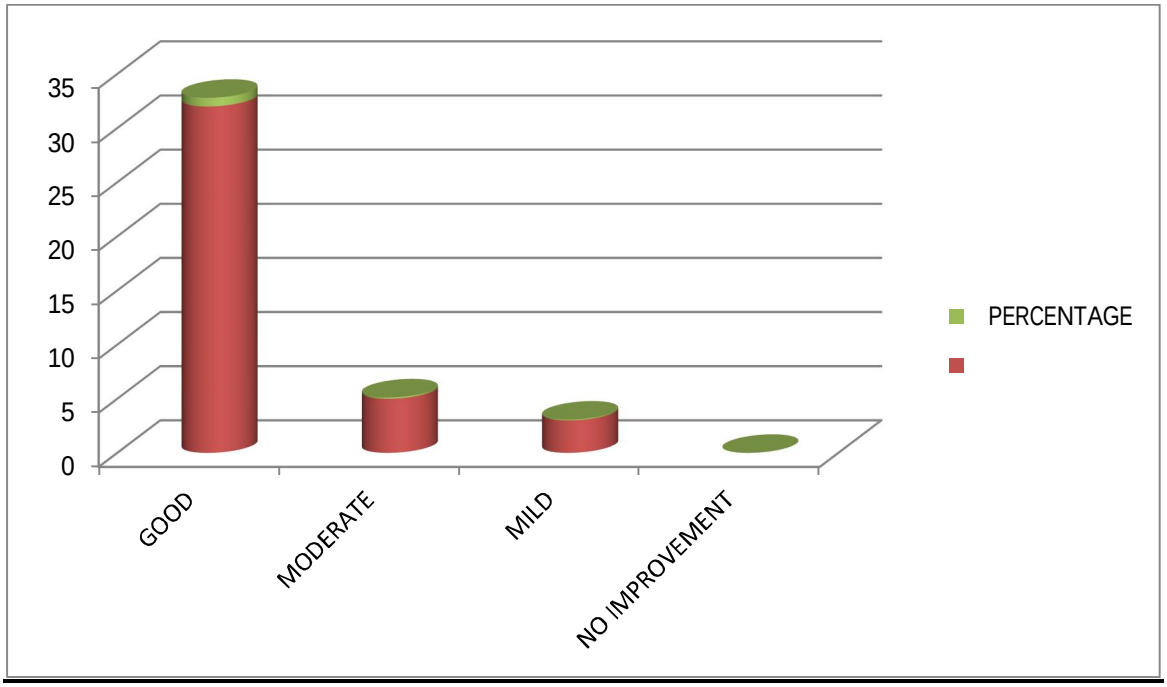


OBSERVATION:

Among the 40 cases, 100% had knee joint, 87.5% cases had proximal interphalangeal joint, ankle joint and metacarpo phalangeal joint, 75% had wrist joint, 65% had cervical spine, 32% had elbows, 25% had hip joints, shoulder joints, and metatarso phalangeal joint.

OVERALL RESULTS:

RESULTS	NO OF CASES	PERCENTAGE
GOOD	32	80%
MODERATE	05	12.5%
MILD	03	7.5%
NO IMPROVEMENT	---	------



OBSERVATION:

Among 40 patients 80% of cases shows good results , 12.5% of cases shows moderate results & 7.5% of cases shows mild results.

LABORATORY INVESTIGATION

HAEMOTOLOGICAL INVESTIGATIONS OF GROUP – I SUBJECTS

SI. No	OP. NO	NAME	AGE/ SEX	Hb (gm)		TC (cu.mm)		DC						ESR				Bl sugar	
								N		L		E		½ hr	1/2 hr	1hr	1hr	P.P	
				BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	1512	Saratha	51/f	13.3	12.8	5900	6500	63	71	27	22	4	6	23	20	46	46	131	128
2	1395	Thatchayini	58/f	12.1	12.5	5300	6352	75	73	20	24	1	3	18	13	38	39	101	110
3	3260	Uma	32/f	10.2	11.7	9600	10200	77	73	22	19	1	8	40	26	90	55	122	91
4	3259	Raman	54/m	12.3	13	7500	6890	62	66	31.3	27	3.1	7	20	18	40	37	110	98
5	6446	Selvi	57/f	12.1	12.5	9800	8700	70	69	23	25	7	6	34	28	70	60	115	110
6	7048	Stella	33/f	9.9	10.6	7010	6700	57	64	32.1	31	3.8	5	33	29	66	58	100	91
7	7050	Santhi	33/f	12	12.8	7000	6864	60	65	35	27	5	8	19	11	36	27	106	98
8	3467	Theepa	39/f	10.2	11	8900	7420	63	69	31	25	5	6	18	15	56	34	123	106
9	2099	Uma maheshwari	40/f	10.5	12	13210	8460	62.6	69	30.9	26	1.8	5	18	14	36	30	121	119
10	9124	Lakshmi	25/f	9.6	11.7	12800	7900	88	58	9	40	1	2	25	15	50	32	150	98

11	9125	Vijaya	50/f	8.9	10.3	11000	8736	68	73	28	21	4	6	29	21	58	45	141	129
12	1420	Vedavalli	40/f	10	12	10540	8750	64.9	72.4	27.7	21.9	7.4	5.2	26	22	52	48	117	104
13	3430	Porkodi	31/f	10.8	11.4	9570	8210	59.5	67.6	32.1	25.4	8.4	7	12	10	24	21	98.2	110
14	4520	Amutha	56/f	10.8	11	6800	7000	64	69	31	27	3	4	19	17	38	35	110	112
15	4349	Susmitha	20/f	7.8	9	5090	6500	53.5	60	32.8	28.5	4.4	6	27	21	54	45	110	98
16	5290	Kasthuri	60/f	11	11.7	8380	5970	65.1	52.3	25.5	36.5	3.1	4.2	25	20	50	40	83	91
17	9454	Rajeshwari	49/f	11.7	12.4	13310	10100	52.8	71	35.9	22.1	4	0.9	26	18	52	38	82	93
18	6384	Kamalaveni	48/f	14.1	12.6	11700	6100	69	58.9	27	32.3	4	0.4	10	6	24	15	91	100
19	9140	Kavitha	29/f	13.8	13	8190	8000	68.2	71.5	24	22.5	2.2	6	12	10	25	21	143	138
20	9635	suriyakumari	59/f	11.2	12	9240	8800	68.7	65	23.7	25	2.4	8	26	20	55	45	120	115

LFT, RFT AND URINE ANALYSIS OF GROUP – I SUBJECT

S.NO	OP.NO	NAME	AGE/ SEX	LIVER FUNCTION TEST					
				BEFORE TREATMENT			AFTER TREATMENT		
				Serum Alkaline phosphatase	SGOT	SGPT	Serum Alkaline phosphatase	SGOT	SGPT
1	1512	saradha	51/f	99	27	23	93	21	19
2	1395	Thatchayini	58/f	95	14	10	89	12	13
3	3260	Uma	32/f	80	20	12	96	18	14
4	3259	Raman	54/m	83	16.4	15.9	91	20.4	18.6
5	6446	Selvi	57/f	81	18.1	15.7	98	17.7	16.4
6	7048	Stella	33/f	106	21	19	100	30	23
7	7050	Santhi	33/f	76	19.2	12.9	80	20	15
8	3467	Theepa	39/f	76	19.2	12.9	79	20.7	14.8

9	2099	Uma maheshwari	40/f	90	13.8	9.0	94	15.2	11.3
10	9124	Lakshmi	25/f	94	14.8	18	90	16	20
11	9125	Vijaya	50/f	84.7	19.1	25	86	24	29
12	1420	Vedavalli	40/f	102	24	21.8	99.6	25.9	22.6
13	3430	Porkodi	31/f	99	21	20.1	89	18.3	17.2
14	4520	Amutha	56/f	96.7	18.3	17.1	101	19.6	18.1
15	4349	Susmitha	20/f	76	14	14	79	16	16
16	5290	Kasthuri	60/f	79	17.9	15	83	19	13
17	9454	Rajeshwari	49/f	42	24.7	16.9	68	26	19
18	6384	Kamalaveni	48/f	53	30.7	22.2	65	29.6	24.3
19	9140	Kavitha	29/f	135	20.6	17	110	25.9	25.3
20	9635	Suriyakumari	59/f	107	18.4	11.2	95	17	12

RRENAL FUNCTION TEST

S.NO	OP.NO	NAME	AGE/ SEX	RENAL FUNCTION TEST			
				BEFORE TREATMANT		AFTER TREATMANT	
				UREA	CREATININE	UREA	CREATININE
1	1512	Saradha	51/f	17	0.79	21.2	0.64
2	1395	Thatchayini	58/f	25	0.8	12.5	0.6
3	3260	Uma	32/f	25	0.9	14	0.8
4	3259	Raman	54/m	20.2	0.96	26.9	0.75
5	6446	Selvi	57/f	30	0.81	28	0.54
6	7048	Stella	33/f	27.9	0.67	31	0.45
7	7050	Santhi	33/f	34	0.99	29	0.61
8	3467	Theepa	39/f	14.7	0.69	16	0.47
9	2099	Uma maheshwari	40/f	22.8	0.54	19.9	0.62
10	9124	Lakshmi	25/f	21	0.67	23	0.71
11	9125	Vijaya	50/f	34	0.73	29	0.51
12	1420	Vedavalli	40/f	17	0.99	19	0.78

13	3430	Porkodi	31/f	21	1.01	19	0.91
14	4520	Amutha	56/f	30	0.96	27.8	0.87
15	4349	Susmitha	20/f	19	0.80	19.9	0.71
16	5290	Kasthuri	60/f	18.5	0.87	20	0.73
17	9454	Rajeshwari	49/f	13.9	0.80	17	0.70
18	6384	Kamalaveni	48/f	10.2	0.7	18	0.56
19	9140	Kavitha	29/f	26.7	0.66	23.4	0.66
20	9635	Suriyakumari	59/f	24.5	0.55	21.2	0.49

UREINE ANALYSIS GROUP I

S.NO	OP.NO	NAME	AGE/ SEX	URINE ANALYSIS					
				ALBUMIN		SUGAR		DEPOSIT	
				BT	AT	BT	AT	BT	AT
1	1512	Saradha	51/f	NIL	NIL	NIL	NIL	NIL	NIL
2	1395	Thatchayini	58/f	NIL	NIL	NIL	NIL	NIL	PC
3	3260	Uma	32/f	NIL	NIL	NIL	NIL	NIL	NIL
4	3259	Raman	54/m	NIL	NIL	NIL	NIL	NIL	NIL
5	6446	Selvi	57/f	NIL	NIL	NIL	NIL	NIL	NIL
6	7048	Stella	33/f	NIL	NIL	NIL	NIL	PC	NIL
7	7050	Santhi	33/f	NIL	NIL	NIL	NIL	NIL	NIL
8	3467	Theepa	39/f	NIL	NIL	NIL	NIL	NIL	NIL
9	2099	Uma maheshwari	40/f	NIL	NIL	NIL	NIL	NIL	PC
10	9124	Lakshmi	25/f	NIL	NIL	NIL	NIL	NIL	NIL
11	9125	Vijaya	50/f	NIL	NIL	NIL	NIL	NIL	NIL
12	1420	Vedavalli	40/f	NIL	NIL	NIL	NIL	PC	NIL

13	3430	Porkodi	31/f	NIL	NIL	NIL	NIL	NIL	NIL
14	4520	Amutha	56/f	NIL	NIL	NIL	NIL	NIL	PC
15	4349	Susmitha	20/f	NIL	NIL	NIL	NIL	NIL	NIL
16	5290	Kasthuri	60/f	NIL	NIL	NIL	NIL	PC	NIL
17	9454	Rajeshwari	49/f	NIL	NIL	NIL	NIL	NIL	NIL
18	6384	Kamalaveni	48/f	NIL	NIL	NIL	NIL	NIL	PC
19	9140	Kavitha	29/f	NIL	NIL	NIL	NIL	NIL	NIL
20	9635	Suriyakumari	59/f	NIL	NIL	NIL	NIL	PC	NIL

IMMUNOLOGICAL REPORT

S.NO	OP NO	NAME	AGE/ SEX	RA FACTOR		ANTI CCP	
				BT	AT	BT	AT
1	1512	Saratha	51/f	90	87	198.79	195.5
2	1395	Thatchayini	58/f	24	21	28	24
3	3260	Uma	32/f	149	149.97	31	31.98
4	3259	Raman	54/m	38.8	36.1	24	21
5	6446	Selvi	57/f	114	113	20	18.64
6	7048	Stella	33/f	50.95	50.18	11.9	11
7	7050	Santhi	33/f	45.2	43	18	15
8	3467	Theepa	39/f	237	236	19	17
9	2099	Uma maheshwari	40/f	2.5	1.97	14.8	11.54
10	9124	Lakshmi	25/f	160	158	29.3	27.6
11	9125	Vijaya	50/f	7.6	3	24	21.86
12	1420	Vedavalli	40/f	109.8	107.01	273.4	270.95
13	3430	Porkodi	31/f	176	174.87	36	35

14	4520	Amutha	56/f	53.2	50.99	27.6	24.98
15	4349	Susmitha	20/f	16	14	28.12	25.09
16	5290	Kasthuri	60/f	71.52	68.70	34	31
17	9454	Rajeshwari	49/f	21.6	21	288.20	288
18	6384	Kamalaveni	48/f	19	18	15.7	14.2
19	9140	Kavitha	29/f	4	3.8	33.60	33
20	9635	suriyakumari	59/f	167	165.87	241	2389.68

PAIN SCORE FOR GROUP 1

S.NO	OP NO	NAME	AGE/ SEX	PAIN SCORE	
				BT	AT
1	1512	Saratha	51/f	8	5
2	1395	Thatchayini	58/f	7	4
3	3260	Uma	32/f	9	9
4	3259	Raman	54/m	8	7
5	6446	Selvi	57/f	9	3
6	7048	Stella	33/f	8	5
7	7050	Santhi	33/f	9	4
8	3467	Theepa	39/f	8	2
9	2099	Uma maheshwari	40/f	9	4
10	9124	Lakshmi	25/f	7	1
11	9125	Vijaya	50/f	8	2
12	1420	Vedavalli	40/f	7	3
13	3430	Porkodi	31/f	9	4
14	4520	Amutha	56/f	9	2
15	4349	Susmitha	20/f	8	3
16	5290	Kasthuri	60/f	7	2
17	9454	Rajeshwari	49/f	8	1
18	6384	Kamalaveni	48/f	9	4
19	9140	Kavitha	29/f	8	2
20	9635	suriyakumari	59/f	9	3

HAEMATOLOGICAL INVESTIGATION GROUP II

SI. No	IP. NO	NAME	AGE/SEX	Hb (gm)		TC (cu.mm)		DC						ESR				Bl sugar	
								p		L		E		½ hr	1/2hr	1hr	1hr	P.P	
				BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1	992/4386	sandhya	45/F	8	11	8000	7400	64	71	30	24	6	5	40	20	72	42	135	124
2	793/9113	chellamal	50/F	7	10.5	6400	8100	60	75	31	22	9	3	60	15	125	32	120	116
3	906/2473	jegathambal	50/F	9.6	10	9400	7300	66	73	28	22	6	5	35	25	70	51	88	97
4	1314/2323	chitra	22/F	10	11.5	10000	8400	52	60	43	32	5	8	6	8	15	18	130	122
5	1406/4888	sittama	45/F	8.9	10.5	8600	7860	65	70	29	25	6	5	64	56	100	89	110	115
6	1418/5253	geetha	37/F	8	9.5	6700	6500	66	72	23.7	22	2.6	6	65	63	100	96	97	95

7	1434/5720	krishnaveni	60/F	9.5	10.1	7200	6700	65	70	33	25	2	5	56	42	120	105	125	110
8	1461/6315	lalitha	55/F	8.8	9.9	10630	8920	70	69.4	20	24.5	2	1.1	38	23.5	96	57	110	98
9	1544/8324	manonmani	59/F	10.4	11.4	11000	8900	55.9	59	34.8	34	2.0	7	18	30	36	52	156	140
10	1619/143	latha	37/F	12.5	12.8	12,100	9800	59	63	23	27	18	10	24	20	52	45	132	126
11	1659/1264	radha	46/F	11	12	7000	8500	70	65	26	30	2	5	30	28	62	56	110	100
12	1712/1501	girija	54/F	9.8	10	8500	8300	58	61	36	30	6	9	32	27	80	60	85	90
13	577/776	Devi	33/F	7.6	9	8400	8200	60	69	37	27	3	4	32	29	75	62	83	85
14	639/6332	Gokularani	44/F	10.4	11	8100	7850	58	60	38	32	4	8	12	10	20	18	259	250
15	676/7451	Umamaheshwariz	40/F	10	11.5	6300	5690	66	71.5	14	15.6	20	2.6	39	31	80	62	133	267

16	798/1616	sankari	44/F	9.8	11	7400	7100	62	68	24	23	14	9	12	11	45	40	128	125
17	849/3539	Rekha	32/F	8.7	10.9	8850	9320	58.9	62.7	29.3	25.8	6.3	5.4	22	15	44	30	120	121
18	856/3629	Uma	36/F	11	11.5	7000	6800	59	63	35	29	6	8	22	19	55	46	130	123
19	15/486	Alagammal	49/F	12.4	12.5	11200	9150	76	69	21	25	3	6	35	26	72	52	115	110
20	8/175	Valarmathi	49/F	11	12	9300	8700	68	71	27	23	5	6	23	20	52	46	90	100

IMMUNOLOGICAL REPORT

S.NO	IP NO	NAME	AGE/ SEX	RA FACTOR		ANTI CCP	
				BT	AT	BT	AT
1	1045/1003	Sandhya	45/F	86.07	64	101	96
2	1265/1586	Chellamal	50/F	114	109	99	71
3	1287/1906	jegathambal	50/F	96	85	79.7	57.38
4	1314/2323	Chitra	22/F	57	39	100.3	89.24
5	1406/4888	Sittama	45/F	51	40	72.9	68.4
6	1418/5253	Geetha	37/F	59	48	99.83	90.2
7	1434/5720	krishnaveni	60/F	126	116	212	199.37
8	1461/6315	Lalitha	55/F	71	63	243.67	229
9	1544/8324	manonmani	59/F	24	18.61	84	71
10	1619/143	Latha	37/F	40	21	68	51.93
11	1659/1264	Radha	46/F	90	79	60	42.7
12	1712/1501	Girija	54/F	112	98.67	184	170.94
13	577/776	Devi	33/F	20	11.2	36.1	28
14	639/6332	gokularani	44/F	94.25	76.3	84	73

15	676/7451	Uma maheshwari	40/F	264.24	260.81	12	9.64
16	798/1616	Sankari	44/F	32	28	49.85	45.52
17	849/3539	Rekha	32/F	33.1	28.67	74	71
18	856/3629	Uma	36/F	295.1	296	58	57.64
19	15/486	Alagammal	49/F	53.7	47.3	98.4	87.46
20	8/175	Valarmathi	49/F	97.6	91.3	124	119

LFT, RFT AND URINE ANALYSIS OF GROUP – II SUBJECT

S.NO	IP.NO	NAME	AGE/ SEX	LIVER FUNCTION TEST					
				BEFORE TREATMENT			AFTER TREATMENT		
				Serum Alkaline phosphatase	SGOT	SGPT	Serum Alkaline phosphatase	SGOT	SGPT
1	992/4386	Sandhya	45/F	87	23.2	19.9	76	28.7	24
2	793/9113	Chellamal	50/F	99	17.7	9.8	87	25.1	14.8
3	906/2473	jegathambal	50/F	99.4	25.2	27.9	87	21.6	17.8
4	1314/2323	Chitra	22/F	95	18.6	8.9	86	20.7	14.3
5	1406/4888	Sittama	45/F	101	31.5	27.1	94	28.7	24.1
6	1418/5253	Geetha	37/F	83	17.4	12	98	16	15.1
7	1434/5720	krishnaveni	60/F	106	22	18	98	18.9	16.2
8	1461/6315	Lalitha	55/F	206	16	22	141	20.8	17.3
9	1544/8324	manonmani	59/F	105	28	31	97	24	28
10	1619/143	Latha	37/F	83	13.5	6.5	97	19.3	12.4
11	1659/1264	Radha	46/F	92	29	24	86	23	20

12	1712/1501	Girija	54/F	101	27.8	19.9	90	20.2	27.1
13	577/776	Devi	33/F	126	30.1	27	113	24	21
14	639/6332	gokularani	44/F	97	29	22	89	21	19
15	676/7451	Uma maheshwariz	40/F	154	361.4	206	120	203	174
16	798/1616	Sankari	44/F	112	17.8	19.3	104	28.1	24.6
17	849/3539	Rekha	32/F	100	26	19	93	24	16.9
18	856/3629	Uma	36/F	89	18.3	16.9	92	21.2	24.6
19	15/486	Alagammal	49/F	95	19.8	21	99	24	26
20	8/175	Valarmathi	49/F	115	32	26	101	24.8	21

RENAL FUNCTION TEST

S.NO	IP.NO	NAME	AGE/ SEX	RENAL FUNCTION TEST			
				BEFORE TREATMANT		AFTER TREATMANT	
				UREA	CREATININE	UREA	CREATININE
1	992/4386	Sandhya	45/F	25	0.5	24	0.81
2	793/9113	Chellamal	50/F	29	0.55	25.1	0.49
3	906/2473	jegathambal	50/F	25	0.74	22	0.52
4	1314/2323	Chitra	22/F	15.9	0.52	21	0.64
5	1406/4888	Sittama	45/F	23	0.9	29	0.76
6	1418/5253	Geetha	37/F	16	1.1	28	0.73
7	1434/5720	Krishnaveni	60/F	29	1.1	33	0.87
8	1461/6315	Lalitha	55/F	15	0.81	21	0.59
9	1544/8324	Manonmani	59/F	12	0.8	24	0.68
10	1619/143	Latha	37/F	11.4	0.55	25	0.47
11	1659/1264	Radha	46/F	16	0.8	22	0.45
12	1712/1501	Girija	54/F	26	0.99	19.8	0.67
13	577/776	Devi	33/F	30	1.0	24	0.84

14	639/6332	Gokularani	44/F	26	0.85	24	0.61
15	676/7451	Uma maheshwariz	40/F	9.99	0.53	15	0.48
16	798/1616	Sankari	44/F	22	0.7	19	0.59
17	849/3539	Rekha	32/F	30	0.94	21	0.72
18	856/3629	Uma	36/F	29	0.88	26	0.70
19	15/486	Alagammal	49/F	34	0.9	27	0.62
20	8/175	Valarmathi	49/F	28	1.1	24	0.68

URINE ALALYSIS OF GROUP II

S.NO	IP.NO	NAME	AGE/ SEX	URINE ANALYSIS					
				ALBUMIN		SUGAR		DEPOSIT	
				BT	AT	BT	AT	BT	AT
1	992/4386	Sandhya	45/F	Nil	Nil	Nil	Nil	Nil	nil
2	793/9113	Chellamal	50/F	Nil	Nil	Nil	Nil	Nil	nil
3	906/2473	Jegathambal	50/F	Nil	Nil	Nil	Nil	Pc seen	Nil
4	1314/2323	Chitra	22/F	Nil	Nil	Nil	Nil	Nil	Nil
5	1406/4888	Sittama	45/F	Nil	Nil	Nil	Nil	Nil	nil
6	1418/5253	Geetha	37/F	Nil	Nil	Nil	Nil	Nil	Nil
7	1434/5720	Krishnaveni	60/F	Nil	Nil	Nil	Nil	Nil	nil
8	1461/6315	Lalitha	55/F	Nil	Nil	Nil	Nil	Nil	Pc seen
9	1544/8324	Manonmani	59/F	Nil	Nil	Nil	Nil	Nil	Nil

10	1619/143	Latha	37/F	Nil	Nil	Nil	Nil	Nil	Nil
11	1659/1264	Radha	46/F	Nil	Nil	Nil	Nil	Nil	Nil
12	1712/1501	Girija	54/F	Nil	Nil	Nil	Nil	Pc seen	Nil
13	577/776	Devi	33/F	Nil	Nil	Nil	Nil	Nil	Nil
14	639/6332	Gokularani	44/F	Nil	Nil	Nil	Nil	Nil	Nil
15	676/7451	Uma maheshwari	40/F	Nil	Nil	Nil	Nil	Nil	Pc seen
16	798/1616	sankari	44/F	Nil	Nil	Nil	Nil	Nil	Nil
17	849/3539	rekha	32/F	Nil	Nil	Nil	Nil	Nil	Nil
18	856/3629	uma	36/F	Nil	Nil	Nil	Nil	Nil	Nil
19	15/486	Alagammal	49/F	Nil	Nil	Nil	Nil	Nil	Pc seen
20	8/175	Valarmathi	49/F	Nil	Nil	Nil	Nil	Nil	Nil

PAIN SCORE

S.No	Ip.no	Name	Age / sex	Pain score	
				Bt	At
1	1045/1003	Sandhya	45/F	9	4
2	1265/1586	Chellamal	50/F	8	3
3	1287/1906	jegathambal	50/F	9	4
4	1314/2323	Chitra	22/F	8	1
5	1406/4888	Sittama	45/F	8	4
6	1418/5253	Geetha	37/F	9	2
7	1434/5720	krishnaveni	60/F	7	1
8	1461/6315	Lalitha	55/F	8	6
9	1544/8324	manonmani	59/F	9	2
10	1619/143	Latha	37/F	7	1
11	1659/1264	Radha	46/F	8	3
12	1712/1501	Girija	54/F	9	5
13	577/776	Devi	33/F	8	3
14	639/6332	gokularani	44/F	8	2
15	676/7451	Uma maheshwari	40/F	7	3
16	798/1616	Sankari	44/F	9	4
17	849/3539	Rekha	32/F	7	1
18	856/3629	Uma	36/F	8	8
19	15/486	Alagammal	49/F	8	2
20	8/175	Valarmathi	49/F	8	3

DISCUSSION

DISCUSSION

The main aim of the treatment was to prove the therapeutic effects of the drug gandhagarasayanam to reduce pain, swelling, restricted movements of the joints in the disease uthiravathasuronitham. It can be co-related with rheumatoid arthritis in modern science.

Rheumatoid arthritis is a chronic inflammatory, destructive, and deforming symmetrical poly-arthritis associated with symmetrical involvement of joints. Uthiravatasuronitham is mainly caused due to imbalance in vatadosham. The drugs which pos ses anti-vatha property as mentioned in siddha literature were selected and the trial drug was prepared.the drug was prepared by the standard operating procedure as mentioned in the protocol.

The clinical study was conducted with a well defined protocol and a proper profoma. After screening patients, 40 cases were selected from government siddha medical college and hospital attached with Aringar Anna Government Hospital for Indian Medicine, Arumbakkam, Chennai-106 during the period 2016-2017. The selected cases were treated with the trail medicines both internally and externally.

AGE:

The percentage of the age group18-20 was 2.5%, 21-30 was 7.5%, 31-40 was 32.5%, 41-50 was 30% , 51-60 was 27.5%.

GENDER:

Among the 40 patients selected 97.5% were females and 2.5% were males.

GUNAM:

Among the 40 cases, 38 cases were found to possess rasatha gunam and 2 cases were found to possess thamo gunam.

BODY CONSTITUTION:

In the study 3 cases belongs to vadha thegi and 37 cases belongs to thontha thegi.

PARUVAKALAM:

Among the 40 cases, 27.5% of cases were admitted to the trail in kaarkaalam,22.5% of cases in koothirkalam and 10% cases in munpanikalam,12.5% in pinpani kalam 7.5% cases in ilavenilkalam,20% in mudhuvenilkaalam.

NILAM:

Among 40 cases, 5% cases were under marutha nilam, and the remaining 95%cases were under neithal nilam.

DIET:

Among 40 cases,87.5% were nonvegetarian and 12.5% were vegetarian diet.

OCCUPATIONAL DISTRIBUTION:

Among 40 cases, 62.5% were housewives, 12.5% were farmers,10% were housemaids and clericals , and 2.5%were drivers and teachers.

SOCIO-ECONOMIC STATUS:

The incidence of the disease was found in 62.5% in middle class ,27.5% in poor and 10% in upper middle class .

DURATION OF ILLNESS:

Among the 40 cases, the duration of the illness at the time of study 27.5% were 1yr-2yrs, 25% were 2-5 yrs, 20% were 6months- 1yr, 17.5% were 3months- 6 months, 7.5% were 5-10 yrs, 2.5% were more than 10 yrs.

ONSET OF SYMPTOMS:

All the cases were of gradual onset only.

VATHAM:

Samaanan,viyaanan were affected in 100% of cases, dhevathathan was affected in 77.5% cases, praanan, udhaanan were affected in 60% of cases, naagan,

koorman, kirukaran, were affected in 30% of cases. Abaanan was affected in 10% of cases.

PITHAM:

Among the 40 cases, saathagam was affected in 100%cases. Analam was affected in 37.5% of cases, ranjagam was affected in 32.5% cases, alosagam was affected in 30% cases, prasagam was affected in 2.5% cases.

KABAM:

Among 40 cases, santhigam was affected in 100% cases, avalambagam was affected in 60% cases, kilethagam was affected in 37.5% cases, tharpagam was affected in 35% cases, pothagam was affected in 5% cases.

GNANENTHRIYAM:

Among the 40 cases all mei was affected in 100%cases, vai was affected in 5% cases.

KANMENTHIRIYAM:

Among the 40 cases, kai kaal are affected in all 100% cases due to pain, swelling, restriction of movements,etc. eruvaai was affected in 10% of cases due to constipation, vaai was affected in 5% of cases due to stomatitis.

UDAL THATHUKKAL:

Among 40 cases, saaram, seneer, oon, kozhuppu, enbu, moolai were affected in all 40 cases.

ENVAGAI THERVUGAL:

In all the cases, examination of naadi, naadi revealed thontham of vatham. Sparisam was affected in 67.5% cases due to warmth felt in the affected joints. Vizhi was affected in 45% cases , naa was affected in 35% of cases, and mala was affected in 10% cases, niram was affected in 2.5%

NAADI:

Among 40 cases, vatha pitta nadi was found in 75% cases, pithavathanadi was found in 25% cases.

NEIKKURI:

Among 40 cases, 77.5% cases showed vathaneer,17.5% cases showed kabhaneer, and 5% cases showed pittaneer.

CLINICAL FEATURES:

Pain, swelling of joints, morning stiffness, tenderness, restricted movements and warmth were found in all 40 cases before treatment.

After treatment there was a considerable reduction in all symptoms particularly in pain, morning stiffness, swelling of joints, tenderness, restricted movements and warmth.

DEFORMITIES:

Out of 40 cases, 25% cases had spindle shaped finger, 12.5% cases had ulnar deviation of hand, 7.5% cases had hallus valgus and 7.5% cases had swan neck deformity.

INVOLVEMENT OF JOINTS:

Among the 40 cases, 100% had knee joint, 87.5% cases had proximal interphalangeal joint, ankle joint and metacarpo phalangeal joint, 75% had wrist joint, 65% had cervical spine, 32% had elbows, 25% had hip joints, shoulder joints, and metatarso phalangeal joint.

ANALYSIS AFTER TREATMENT:

Among 40 patients 80% of cases shows good results , 12.5% of cases shows moderate results &7.5 % of cases shows mild results.

SUMMARY

SUMMARY

Uthiravatha suronitham is one among the 80 types of vatha diseases classified by Yugimuni. In modern, uthira vatha suronitham is being co-related with rheumatoid arthritis.

The main aim of this study was to prove the efficacy of gandhaga rasayanam and navanathasittha thailam in uthiravatha suronitham.

Before Clinical trail pre clinical analysis such as physiochemical analysis,toxicity studies,antimicroibial studies and pharmacological studies were carried out.

Clinically 40 cases which was diagnosed with RA were selected and treated with the trail drugs gandhaga rasayanam [internal], and navanathasittha thailam [external].

Before starting the treatment, the patients were given clear and complete information regarding the treatment protocol and dietary regimens.

Initially the patient was advised to undergo purgation before starting the treatment.

Later the trail drugs gandhaga rasayanam [internal] and navanathasittha thailam [external] was administered to the patients for a period of 48days [1 mandalam].

During the period of treatment the patients were under dietary regimen (dos and donts for vatha disease)

Daily changes of the patients were monitored and recorded. Incase of adverse drug reactions, the case was being withdrawn from the treatment.

From this study, it is proved that the gandhaka rasayanam and navanathasittha tailam has a good therapeutic effect over uthiravatha suronitham.

The results of the outcome of the trail medicines by grading methods were as follows:

- Good improvement - 80%
- Moderate improvement -12.5%
- Mild improvement -7.5%
- No improvement - ---

CONCLUSION

CONCLUSION

Uthiravathasuronitham is being co-related to rheumatoid arthritis in modern medicine. Rheumatoid arthritis is a chronic inflammatory, destructive and deforming , symmetrical poly arthritis associated with symmetrical involvement of joints.

Uthiravathasuronitham mainly occurs due to de- arrangement of vatha and pitta dosham .

The Toxicological studies reveals that the trial drug doesn't show any toxicity in rat models.

The pre-clinical studies shows that the trail drug has got significant Anti-inflammatory against carageenan induced paw edema method and Analgesic action against acetic acid induced writhing test.

The clinical study proves remarkable decrease in the symptoms of the disease.

The biostatistical analysis declares that the effect of the trial drug is remarkable.

The study proves the therapeutic effect of the drug gandhaga rasayanam (int) and navanathasittha tailam (ext) over morning stiffness, pain, swelling, restricted movements, etc. were significant and no adverse effects were reported during the course of treatment.

After undergoing the treatment, the patients were able to do their daily routine by themselves without any others help.

The main aim of the treatment was to normalize the de-arranged dosham and to retrieve from the symptoms and overall quality of life.

ANNEXURE

CERTIFICATE

The Tamil Nadu Dr.M.G.R. Medical University

#69, Anna salai, Guindy, Chennai-600 032.

This certificate is awarded to

Dr./~~Mr.~~/Ms. M. SHRISARANYA

for participating as ~~Resource~~ ~~Person~~ / Delegate in the Twelfth Workshop on

"Research Methodology & Biostatistics"

for AYUSH Post Graduates & Researchers

Organised by the Department of Siddha

The Tamil Nadu Dr. M.G.R. Medical University from 2nd to 6th September 2013.

Dr. N. KABILAN M.D. (Siddha)
Reader, Dept. of Siddha

Dr. JHANSI CHARLES, M.D.
Registrar

Prof. Dr. D. SHANTHARAM, M.D., D.Diab.,
Vice-Chancellor

THE TAMILNADU Dr.M.G.R. MEDICAL UNIVERSITY, GUINDY, CHENNAI-600 032

DEPARTMENT OF SIDDHA

XII WORKSHOP ON "RESEARCH METHODOLOGY AND BIOSTATISTICS"

Attendance Certificate

This is to certify that Dr M. Shri Saranya **of Government Siddha Medical College, Chennai attended the WORKSHOP ON "RESEARCH METHODOLOGY AND BIOSTATISTICS" from 02.09.2013 to 06.09.2013 at The Tamil Nadu Dr MGR Medical University, Chennai-600 032.**

6/9/13

Dr.N.Kabilan
Reader, Dept. of Siddha

GOVERNMENT SIDDHA MEDICAL COLLEGE
Arumbakkam, Chennai-106

Communication Of The Decision Of Institutional Ethics Committee (IEC)

IEC No: GSMC-CH-ME-2/015/2013

Protocol title:

AN OPEN PILOT STUDY ON UTHIRAVATHA SURONITHAM (RHEUMATOID ARTHRITIS) WITH THE TRIAL DRUG GANDHAGA RASAYANAM (INT) AND NAVANATHA SITTHA THAILAM (EXT).

Principal Investigator: DR. M. SHRISARANYA

Name & Address of Institution:

Government Siddha Medical College,

Arumbakkam, Chennai-106

☑ New Review ☐ Revised Review ☐ Expedited Review

Date of review (DD/MM/YY): 30-12-2013

Date of Previous Review, If Revised Application:

Decision of the IEC

☑ Recommended ☐ Recommended with suggestions

☐ Revision ☐ Rejected

Suggestions / Reasons / Remarks:

1. Study period must be changed into 12 months.
2. RA cannot be taken as a factor for study.

Recommended for a period of 1 year
from date of completion of preclinical studies :

Please Note:

- Inform IEC immediately in case of any adverse events/serious drug reaction.
- Seek IEC approval in case of any change in the study procedure, site and investigator
- This approval is valid only for period mentioned above
- IEC member have the right to review the trial with prior intimation.

Dr.P.Jeyaprakashnarayanan
Chairman

30/12/13

Dr.A.M.Abdul kadher
Member Secretary

INSTITUTIONAL ETHICS COMMITTEE

Date: 30-12-2013

Sub: IEC review of research proposals.

Ref: Your letter dated

MEMBERS	PARTICIPATION	SIGNATURE
DR.JEYA PRAKASH NARAYANAN M.D(S), Chairman	✓	
DR.A.M.ABDUL KADHER,M.D(S).,Ph.D., Member Secretary		
DR.KABILAN M.D(S), Clinician- Siddha		
DR.SATHIYA RAJESWARAN M.D(S), Clinician- Siddha		
DR.G.AADINAATH REDDY, M.Pharm, Ph.D., Pharmacologist		
DR.THILAGAVATHI,Msc.,Ph.D., Social Scientist		
DR.MAHALAKSHMI,M.A,Ph.D., Linguistic Expert		
DR.VIDYA, M.B.B.S., DMRD., Modern Medicine Expert		
MR.P.SARAVANAN, Layman		

Dr.P.Jeyaprakashnarayanan
Chairman

Dr.A.M.Abdul kadher
Member Secretary

30/12/13

CERTIFICATE

This is certify that the project titled *Pharmacological and Toxicological evaluation of GANDHAGA RASAYANAM in Swiss albino rats* has been approved by the IAEC.

IAEC/XLII/02/CLBMCP/2014 dated 22.01.2014

Name of Chairman/ Member Secretary IAEC:

10/02/14

Signature with date

C.L.BAID METHA COLLEGE OF PHARMACY

(An ISO 9001-2000 certified institute)

Jyothi Nagar, Old Mahabalipuram Road

Thoraipakkam, Chennai – 600 097

CERTIFICATE

This is to certify that the project work titled, Pharmacological and toxicological evaluation of Gandhaga Rasayanam ,was carried out under my supervision

C.L. Baid Metha College of Pharmacy CHENNAI-97 Thoraipakkam

Dr.P.Muralidharan

10/12/14

Clinical Trial Details (PDF Generation Date :- Tue, 11 Jul 2017 10:58:57 GMT)

CTRI Number	CTRI/2017/05/008469 [Registered on: 03/05/2017] - **Trial Registered Retrospectively**
Last Modified On	26/04/2017
Post Graduate Thesis	Yes
Type of Trial	Interventional
Type of Study	Siddha
Study Design	Non-randomized, Multiple Arm Trial
Public Title of Study	A Clinical trial to evaluate the efficacy of Siddha drugs Gandhaga Rasayanam (Internal) & Navanatha sittha thailam (External) in patients having multiple joint pain
Scientific Title of Study	An open pilot study on Uthiravatha suronitham (Rheumatoid arthitis) with the trial drug Gandhaga rasayanam (Internal) and Navanatha sittha thailam (Ext)

Secondary IDs if Any

Secondary ID	Identifier
NIL	NIL

Details of Principal Investigator or overall Trial Coordinator (multi-center study)

Details of Principal Investigator	
Name	Dr M Shrisaranya
Designation	PG Scholor
Affiliation	Govt siddha medical college
Address	Department of sirappu maruthuvam, Govt siddha medical college, No.6, Anna arch Road, NSK Nagar, Arumbakkam, Chennai Chennai TAMIL NADU 600106 India
Phone	8098372738
Fax	
Email	drshrisaranya@gmail.com

Details Contact Person (Scientific Query)

Details Contact Person (Scientific Query)	
Name	Dr M Shrisaranya
Designation	PG Scholor
Affiliation	Govt siddha medical college
Address	Department of sirappu maruthuvam, Govt siddha medical college, No.6, Anna arch Road, NSK Nagar, Arumbakkam, Chennai Chennai TAMIL NADU 600106 India
Phone	8098372738
Fax	
Email	drshrisaranya@gmail.com

Details Contact Person (Public Query)

Details Contact Person (Public Query)	
Name	Dr M Mohamed mustafa
Designation	Head of the department
Affiliation	Govt siddha medical college
Address	Department of sirappu maruthuvam, Govt siddha medical college, No.6, Anna arch Road, NSK Nagar, Arumbakkam, Chennai Chennai TAMIL NADU 600106 India

	Phone	9444190077
	Fax	
	Email	spmhibiscus@gmail.com

Source of Monetary or Material Support

Source of Monetary or Material Support
> Govt siddha medical college, No.6, Anna arch Road, NSK Nagar, Arumbakkam, Chennai 600106

Primary Sponsor

Primary Sponsor Details	
Name	Govt siddha medical college
Address	Dept. of sirappu maruthuvam, Govt siddha medical college, Chennai, tamilnadu
Type of Sponsor	Government medical college

Details of Secondary Sponsor

Name	Address
NIL	NIL

Countries of Recruitment

List of Countries
India

Sites of Study

Name of Principal Investigator	Name of Site	Site Address	Phone/Fax/Email
Dr M Shrisaranya	Arignar Anna Hospital of Indian Medicine and Homoeopathy	Room No.4, Siddha Division, Department of Sirappu maruthuvam, Arignar Anna Hospital of Indian Medicine and Homoeopathy, Arumbakkam, Chennai 600106 Chennai TAMIL NADU	8098372738 drshrisaranya@gmail.com

Details of Ethics Committee

Name of Committee	Approval Status	Date of Approval	Is Independent Ethics Committee?
institutional ethics committee	Approved	30/12/2013	No

Regulatory Clearance Status from DCGI

Status	Date
Not Applicable	No Date Specified

Health Condition / Problems Studied

Health Type	Condition
Patients	Patients having arthritis of three or more joints , Patients having RA factor POSITIVE , morning stiffness, CRP positive and anemia.

Intervention / Comparator Agent

Type	Name	Details
Comparator Agent	Nil	Nil
Intervention	Gandhaga rasayanam (int)	Gandhaga rasanayam (int)_500mg twice daily with hot water for 48 days
Intervention	Navanadha sittha thailam (ext)	Navanadha sittha thailam (ext)_10ml external application for 48 days

Inclusion Criteria

Inclusion Criteria	
Age From	18.00 Year(s)
Age To	60.00 Year(s)
Gender	Both
Details	1. Patients having arthritis of 3 or more joints 2. Morning stiffness

	3. RA factor positive 4. C-Reactive Protein (CRP) positive 5. Anti Cyclic Citrullinated Peptide (Anti CCP) Positive 5. Patients who are willing to undergo laboratory investigations

Exclusion Criteria

Exclusion Criteria	
Details	1. Rheumatic fever 2. History of sulphur allergy 3. Psoriatic arthropathica, 4. Progressive systemic sclerosis 5. Gouty arthritis, 6. Pregnancy and lactation

Method of Generating Random Sequence	Not Applicable
Method of Concealment	Not Applicable
Blinding/Masking	Not Applicable

Primary Outcome

Outcome	Timepoints
Reduction in pain and swelling and morning stiffness	12months

Secondary Outcome

Outcome	Timepoints
To study the safety parameters of the drug before and after treatment	12months

Target Sample Size	**Total Sample Size=**40 **Sample Size from India=**40
Phase of Trial	Phase 2
Date of First Enrollment (India)	16/08/2016
Date of First Enrollment (Global)	No Date Specified
Estimated Duration of Trial	**Years=**1 **Months=**0 **Days=**0
Recruitment Status of Trial (Global)	Not Applicable
Recruitment Status of Trial (India)	Open to Recruitment
Publication Details	None yet
Brief Summary	It is a Non Randomized open clinical trial. During this trial period 500 mg of Gandhaga Rasayanam (Internal) with hot water, twice a day and 10 ml of Navanatha Sittha thailam (External) is administered for 48 days in patients having Uthiravatha suronitham (Rheumatoid arthritis). All the details regarding the study will be documented and the result will be published.

சித்த மருத்துவ மைய ஆராய்ச்சி நிலையம், அரும்பாக்கம், சென்னை - 600 106
सिध्द केन्द्रीय अनुसंधान संस्थान, अरुम्बाक्कम, चेन्नई- 600 106
Siddha Central Research Institute
Arignar Anna Govt. Hospital Campus, Arumbakkam, Chennai-600 106
Govt. of India
Phone: 044-26214925, Tele Fax: 044-26214926, e-mail: cresiddha@gmail.com, Web: www.crisiddha.tn.nic.in

27th February 2014

CERTIFICATE

Certified that the market drugs submitted for identification by Dr. M. Shrisaranya, II year, PG, Sirappu Maruthuvam, Govt., Siddha Medical College, Chennai - 106 are identified as

1. Kirambu	*Syzygium aromaticum* (L.) Merr. & L.M. Perry (Flower bud)
2. Elakkai	*Elettaria cardamomum* (L.) Maton (Fruit)
3. Ilavangappattai	*Cinnamomum verum* J.Presl (Stem bark)
4. Jathikkai	*Myristica fragrans* Houtt.(Kernel)
5. Thalesapathiri	*Taxus wallichiana* Zucc. (Leaf)
6. Seeragam	*Cuminum cyminum* L. (Fruit)
7. Omam	*Trachyspermum ammi* (L.) Sprague (Fruit)
8. Vilamichuver	*Plectranthus vettiveroides* (Jacob) N.P.Singh & B.D.Sharma (Root)
9. Sitharathai	*Alpinia officinarum* Hance (Rhizome)
10. Sithiramoolam	*Plumbago zeylanica* L. (Root)
11. Thippilimoolam	*Piper longum* L.(Root)
12. Aanai thippili	*Piper retrofractum* Vahl (Fruit)
13. Karunjeeragam	*Nigella sativa* L. (Seeds)
14. Munthirigai	*Vitis vinifera* L. (Fruit)
15. Santhana thool	*Santalum album* L. (Wood powder)
16. Athimaturam	*Glycyrrhiza glabra* L.(Stolon and root)
17. Jadamanjil	*Nardostachys jatamansi* (D. Don) DC. (Rhizome)

18. Paeritchai	*Phoenix dactylifera* L.(Fruit)
19. Vettiver	*Chrysopogon zizanioides* (L.) Roberty (Root)
20. Kumkumapoo	*Crocus sativus* L. (Style & Stigma)
21. Amukkara kizhangu	*Withania somnifera* (L.) Dunal (Root)
22. Nerunjil mul	*Tribulus terrestris* L. (Fruit)
23. Poonaikaali	*Mucuna pruriens* (L.) DC.(Seed)
24. Parangippattai	*Smilax china* L. (Root)
25. Koraikkizhangu	*Cyperus rotundus* L.(Rhizome)
26. Sirunagappoo	*Cinnamomum wightii* Meisn (Immature fruit)
27. Nilappanai kizhangu	*Curculigo orchioides* Gaertn.(Tuberous root)
28. Thakkolam	*Illicium verum* Hook.f. (Fruit)
29. hanneervittan kizhangu	*Asparagus racemosus* Willd. (Tuberous root)
30. Jathipathiri	*Myristica fragrans* Houtt. (Aril)

Sasikala Ethirajulu

Dr. Sasikala Ethirajulu
Research Officer (Pharmacognosy)

S. J. J. Pandian

Dr. S. Jega Jothi Pandian
Research Officer In-charge

THE TAMILNADU Dr.M.G.R. MEDICAL UNIVERSITY, GUINDY, CHENNAI-600 032

DEPARTMENT OF SIDDHA

XII WORKSHOP ON "RESEARCH METHODOLOGY AND BIOSTATISTICS"

Attendance Certificate

This is to certify that Dr M. Shri Saranya **of Government Siddha Medical College, Chennai attended the WORKSHOP ON "RESEARCH METHODOLOGY AND BIOSTATISTICS" from 02.09.2013 to 06.09.2013 at The Tamil Nadu Dr MGR Medical University, Chennai-600 032.**

6/9/13

Dr.N.Kabilan
Reader, Dept. of Siddha

HEAVY METAL ANALYSIS

Test Report

Print Date : 30/12/2014

SAMPLE NOT DRAWN BY SGS INDIA PVT. LTD.

Report No : CG14-031981.001 **JOE No** : CG14-031981

Report Control No : CGR0000298707

Sample described by customer as : GANDHAGA RASAYANAM

Customer Name	:	DR.M.SHRISARANYA
Customer Address	:	NO.66, GRACE HOMES,
	:	2ND FLOOR, SIVAPRAKASAM NAGAR, 1ST MAIN ROAD,
City	:	PUZHUDHIVAKKAM, CHENNAI
Postal Code	:	91
State	:	TAMIL NADU
Country	:	INDIA
Sample Type	:	GANDHAGA RASAYANAM
Received	:	26/12/2014
Sample Qty. Recd.	:	25G
Test Start	:	26/12/2014
Test End Date	:	30/12/2014

Test/Parameter	Method	Result	Unit
Lead (as Pb)	SO-IN-MUL-TE-063 by ICP-MS	0.21	mg/kg
Mercury (as Hg)	SO-IN-MUL-TE-063 by ICP-MS	0.55	mg/kg
Cadmium (as Cd)	SO-IN-MUL-TE-063 by ICP-MS	BLQ (LOQ : 0.01)	mg/kg
Arsenic (as As)	SO-IN-MUL-TE-063 by ICP-MS	0.23	mg/kg

Per pro SGS India Private Ltd

K Kumar
Authorized Signatory

****End of Report****

SGS India Pvt. Ltd. [illegible] Tel: 91-44-66081600
Regd & Corp. Off : SGS House, 4B, A.S. Marg, Vikhroli (West), Mumbai-400083. Tel : (022) 25798421 to 28 Fax : (022) 25798431 to 35 www.sgs.com

Member of the SGS Group (SGS SA)

TOXICOLOGICAL ANALYSIS

Annexures

Toxicological study

Acute toxicity activity:

Acute toxicity study was carried out as per OECD guideline (Organization for Economic Co - operation and Development, Guideline-423

Animal : Healthy swiss albino female rat weighing 220–240 gm

Studied carried out at three female rat under fasting condition, signs of toxicity was observed for every one hour for first 24 hours and every day for about 14 days from the beginning of the study.

INTRODUCTION:

The acute toxic class method is a stepwise procedure with the use of 3 animals of a single sex per step. Depending on the mortality and/or the moribund status of the animals, on average 2-4 steps may be necessary to allow judgment on the acute toxicity of the test substance. Morbid animals or animals obviously in pain or showing signs of severe and enduring distress shall be humanely killed, and are considered in the interpretation of the test results in the same way as animals that died on test. The method allows for the determination of an LD50 value only when at least two doses result in mortality higher than 0% and lower than 100%.

PRINCIPLE:

It is the principle of the test that based on a stepwise procedure with the use of a minimum number of animals per step, sufficient information is obtained on the acute toxicity of the test substance to enable its classification. The substance is administered orally to a group of experimental animals at one of the defined doses. The substance is tested using a stepwise procedure, each step using three animals of a single sex. Absence or presence of compound-related mortality of the animals dosed at one step will determine the next step, i.e.; − no further testing is

needed − dosing of three additional animals with the same dose − dosing of three additional animals at the next higher or the next lower dose level. The method will enable a judgment with respect to classifying the test substance to one of a series of toxicity classes.

METHODOLOGY:

Selection of animal species:

The preferred rodent species is rat, although other rodent species may be used. Healthy young adult animals of commonly used laboratory strain Swiss albino is used . Females should be nulliparous and non-pregnant. Each animal at the commencement of its dosing should be between 8 and 12 weeks old and its weight should fall in an interval within±20 % of the mean weight of the animals.

Housing and feeding conditions:

The temperature in the experimental animal room should be 22ºC (+3ºC). Although the relative humidity should be at least 30% and preferably not exceed 70% other than during room cleaning the aim should be 50-60%. Lighting should be artificial, the sequence being 12 hrs light, 12 hrs dark. For feeding, conventional laboratory diets may be used with an unlimited supply of drinking water. Animals may be grouped and tagged by dose, but the number of animals per cage must not interfere with clear observations of each animal.

Preparation of animals:

The animals are randomly selected, marked to permit individual identification, and kept in their cages for at least 7 days prior to dosing to allow for acclimatization to the laboratory conditions.

Observation done:

Group	Day
Body weight	Normal
Assessments of posture	Normal
Signs of Convulsion Limb paralysis	Absence of sign (-)
Body tone	Normal
Lacrimation	Absence
Salivation	Absence
Change in skin color	No significant colour change
Piloerection	Normal

Defecation	Normal
Sensitivity response	Normal
Locomotion	Normal
Muscle grip ness	Normal
Rearing	Mild
Urination	Normal

Dose mg/kg	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
2000	+	-	-	-	-	+	-	-	-	-	-	+	-	+	-	-	-	-	-	-

1. Alertness 2.Aggressiveness 3. Pile erection 4. Grooming 5.Gripping 6. Touch Response 7. Decreased Motor Activity 8.Tremors 9 Convulsions 10. Muscle Spasm 11. Catatonia 12.Musclerelaxant 13.Hypnosis 14.Analgesia15.Lacrimation

16. Exophthalmos 17. Diarrhea 18. Writhing 19 Respiration 20. Mortality.

Sub-chronic toxicity test

Repeat-dose oral toxicity study was carried out according to OECD guideline 407.The animals were divided into three groups of 8 animals each (4 males and 4 females).

Group I received 10 ml/kg body weight of distilled water and served as control. Groups

II and group III received extract doses of 100mg/kg and 200 mg/kg body wt, respectively. The drug was administered daily for 28 days the same time daily and observed at least

twice daily for morbidity and mortality.

On the 29th day, after an overnight fast, the rats were anaesthetized with ether and blood sample for hematological and biochemical analysis were collected into tubes with and without EDTA, respectively.

Histopathology studies were carried out on liver, kidney and spleen and recorded

HAEMOTOLOGY

CBC

WBC	:	7,500 cells/cumm

Differential Count

NEUTROPHILLS	:	14 %
LYMPHOCYTES	:	85 %
EOSINOPHILS	:	01 %
MONOCYTES	:	00 %
RBC	:	5.67millions/cumm
HB	:	12.5gms%

PCV : 31.2 %

MCV : 55.0fL

MCH : 22.0pg

MCHC : 40.1 Grams/dl

PLATELET : 1.83 Lakhs/cumm

BIOCHEMISTRY

Blood sugar : 71 mg/dl

BUN : 56.5 mg/dl

Creatinine : 1.5 mg/dl

SGOT : 150 U/L

SGPT : 87 U/L

ALP : 370 U/L

T.Protein : 8.3 grams/dl

Albumin : 4.0 grams/dl

LIPID PROFILE

T. Cholesterol : 108 mg/dl

Triglycerides : 70 mg/dl

HDL : 26 mg/dl

LDL : 68 mg/dl

VLDL : 14.0 mg/dl

Ratio 1(T.CHO/HDL) : 4.1

Ratio 2(LDL/HDL) : 2.6

PHARMACOLOGICAL ACTIVITIES

ANNEXURE -3

PHARMACOLOGICAL ANALYSIS

ANALGESIC ACTION OF GANDHAGA RASAYANAM

Acetic acid Induced Writhing Test : olufunnmilayo et al

AIM:

The analgesic activity of the Gandhagarasayanam was evaluated using acetic acid induced writhing method in mice.

MATERIALS AND METHODS:

PROCEDURE:

Here acetic acid is administered intra-peritoneally to the experimental animals to create pain sensation. Reference drug is aspirin. Animals are randomly allotted as 5 groups , 5 animals in each group. The control group received 10ml/kg distilled water orally. The reference group received DICLOFENAC SODIUM 25mg/kg (dissolved in distilled water) p.o. Groups 3, 4 and 5 were orally pretreated with sample 100mg and 200mg/kg respectively. All the drugs were administered 30 min before i.p. injection of 0.6 % v/v 1ml/kg glacial acetic acid. The number or writhing (extension of hind limb as a result of contraction of abdominal muscle). Immediately after the injection of acetic acid was counted for 30mins. The reduction in writhing is indication of analgesic property.

Result:

Treatment	Dose	No of writhing (mean ±S.E.M)	Inhibition (%)
Control (Saline)	10ml/kg	28.33± 1.16	-
Gandhagarasayanam	100mg	19.00±0.51	32.93
Gandhagarasayanam	200mg	10.33±0.66	63.53

INFERENCE:

From the above table it is clear that the drug **gandhaga rasayanam** has significant anti analgestic activity.

ANTI-INFLAMMATORY ACTIVITY OF GANDHAGA RASAYANAM[WINTER ET AL **] :**

AIM:

The anti-inflammatory activity of Gandhagarasayanam was determined by carageenan induced paw edema method.

MATERIALS AND METHODS:

PROCEDURE:

Rats are randomly alloted in 4 groups, 6 animals in each group. Paw edema was induced by 0.1ml of 1% carageenan in physiological saline into the sub planar tissue of left hind paw of each rat. Samples (100mg, 200mg/kg) were administered orally 30 mins prior to carageenan.

Group-I: animals (carrageenan control) received vehicle 30 min prior to administration of carrageenan injection.

Group-II: animals the standard reference group was given p.o. aqueous solution of Indomethacin (5 mg/kg), 30 min prior administration carrageenan injection.

Group-III: animals received 100mg/kg Gandhagarasayanam 30 min prior to administration of carrageenan injection.

Group-IV: animals received 200mg/kg of Gandhagarasayanam 30 min prior to administration of carrageenan injection.

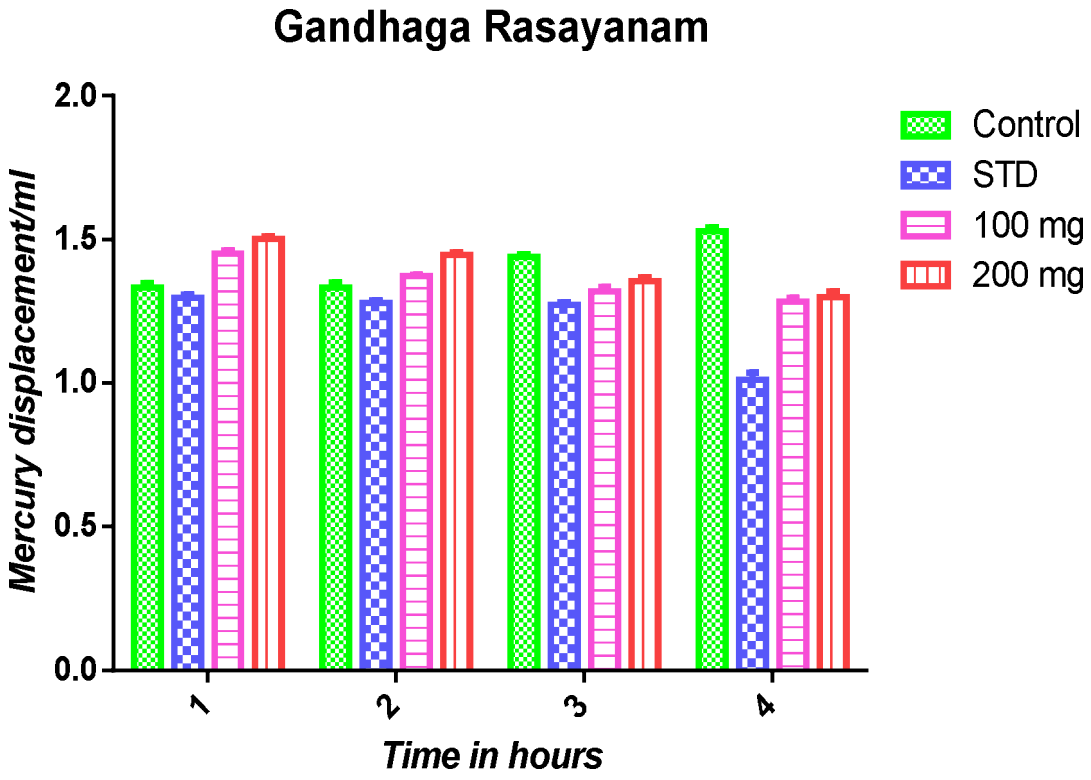
The paw volume was measured using plethysmograph immediately after 1hr of injection, again at 2, 3, and 4^{th} hour eventually after treatment. The mean volume was compared with control group

Result:

The details of the experimental results are shown in the table which indicates the effect of **GANDHAGA RASAYANAM.**

Group	**Dose mg/kg**	**Mean Paw volume in ml**			
		1hr	**2hr**	**3hr**	**4hr**
Control	Vehicle	1.333±0.0160	1.333± 0.0176	1.440±0.0081	1.530±0.0129
Indomethacin	5mg/kg	1.296± 0.0116	1.280±0.0089	1.272±0.0102	1.012±0.0241
Gandhagarasayanam	100mg/kg	1.452±0.0102	1.372±0.0048	1.320±0.0141	1.284±0.0132
Gandhagarasayanam	200mg/kg	1.502±0.0102	1.446±0.0097	1.356±0.013270	1.300±0.0200

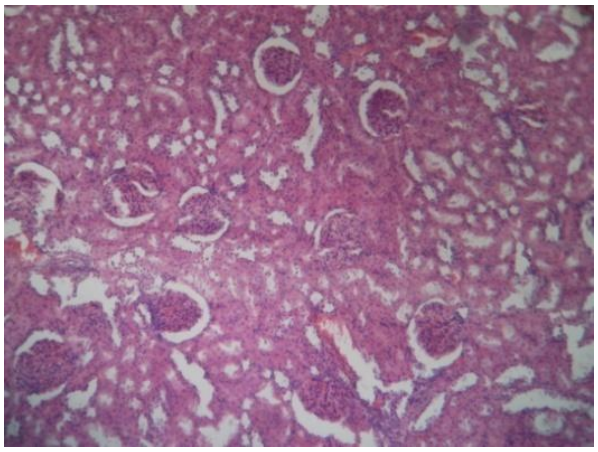
Effect of Gandhaga Rasayanam in Carageenin induced rat paw edema

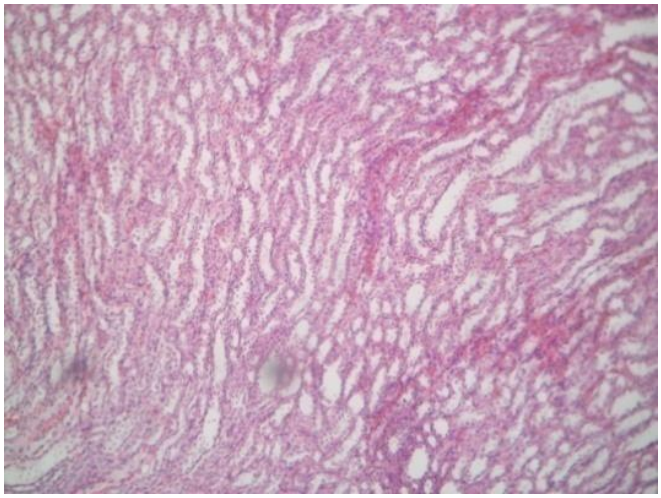


Inference:

The test drug " GANDHAGA RASAYANAM" has got significant acute anti-inflammatory effect when compared with the standard drug.

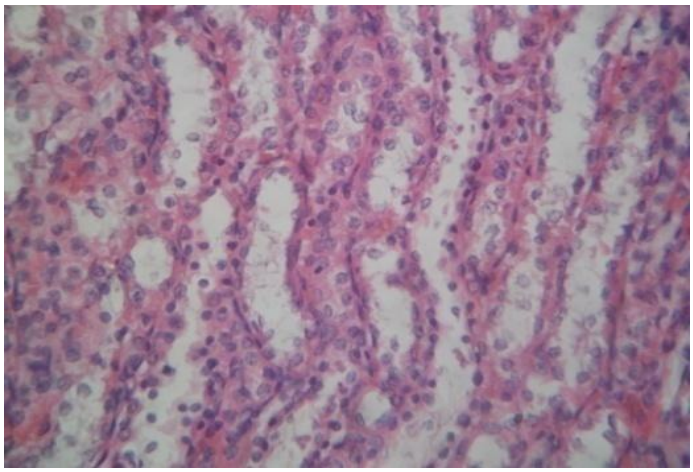
Histopathology of kidney

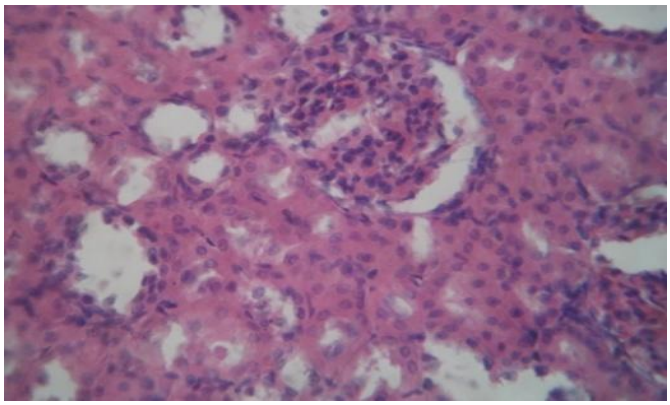




10 x magnification 40 x magnification

GandhagaRasayanam 100 mg





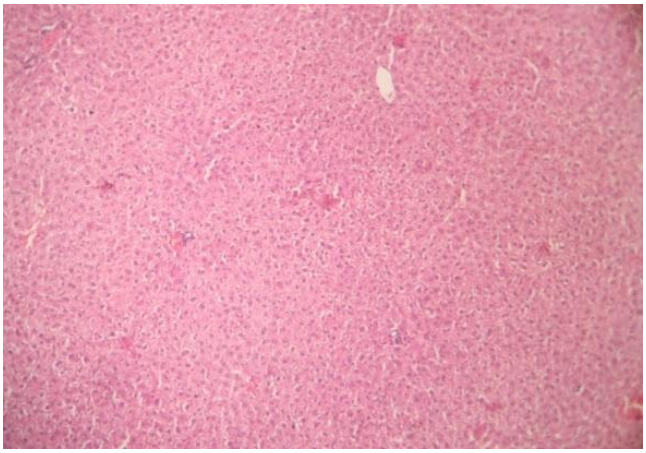
10 x magnification 40 x magnification

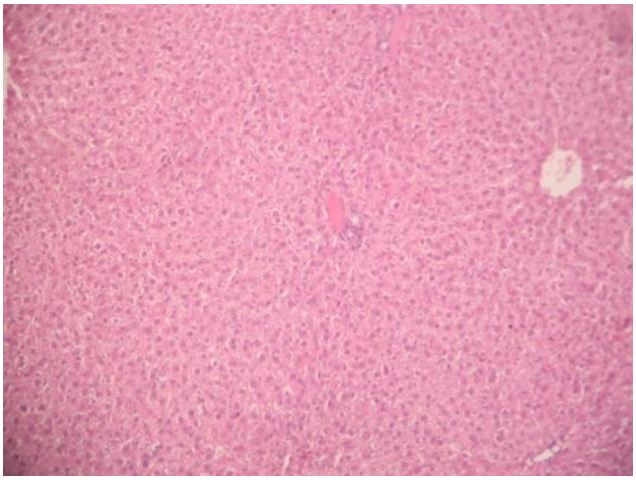
GandhagaRasayanam 200 mg

Report

Section studied shows congestion of peri tubular vessel. The glomeruli and tubules show normal histology

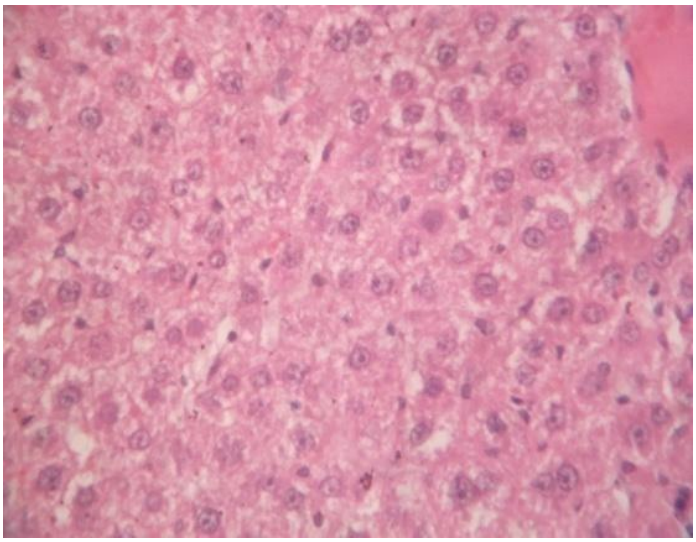
Histopathology of liver

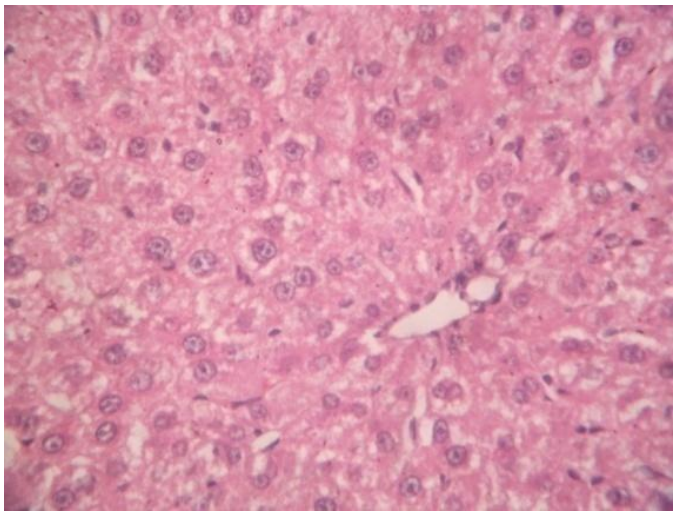




10 x magnification 40 x magnification

GandhagaRasayanam 100 mg





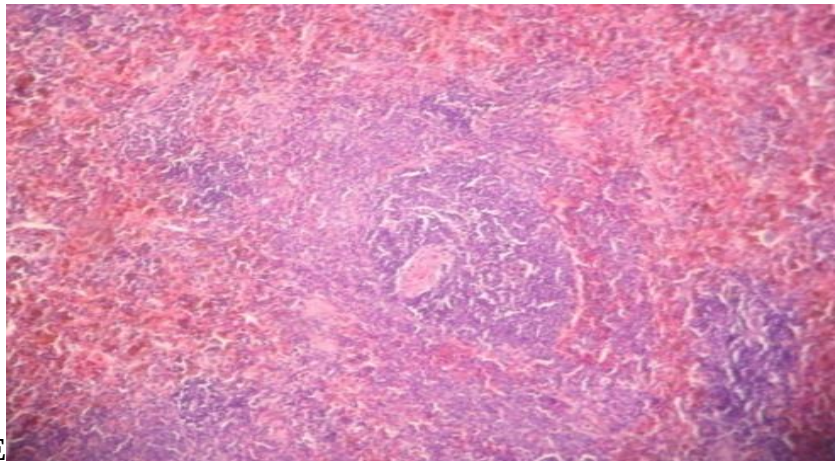
10 x magnification 40 x magnification

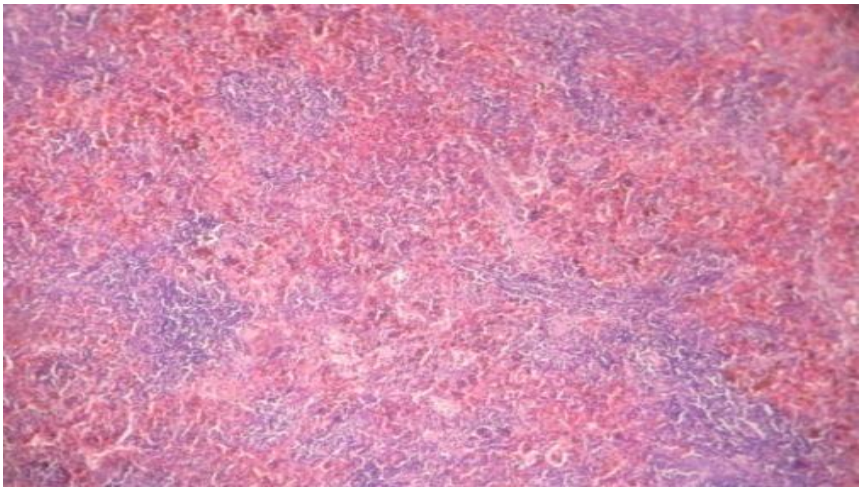
GandhagaRasayanam 200 mg

Report

Section studied shows normal lobular pattern.

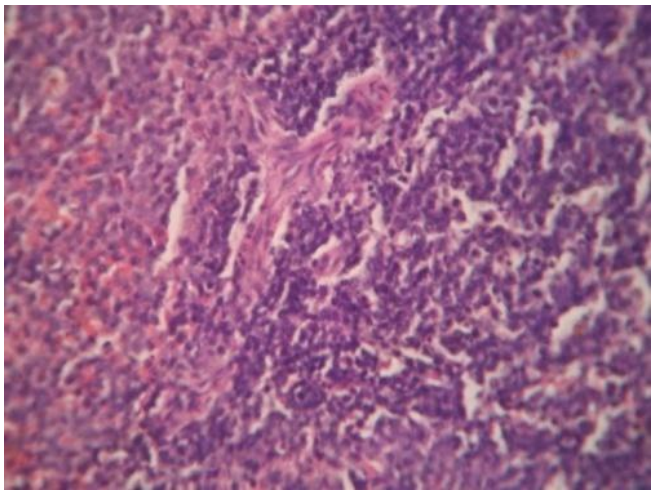
Histopathology of spleen

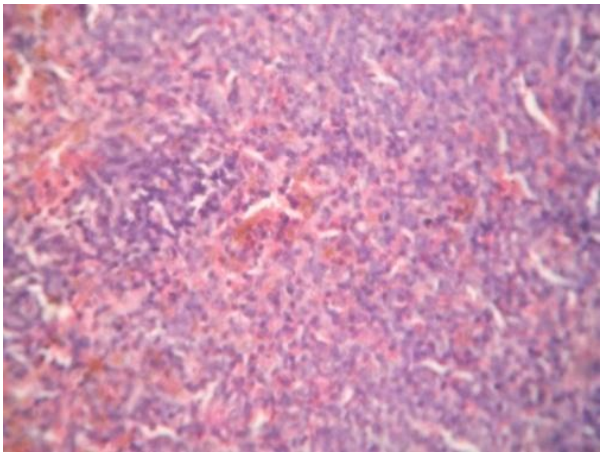
E 



10 x magnification ` 40 x magnification

GandhagaRasayanam 100 mg





10 x magnification 40 x magnification

GandhagaRasayanam 200 mg

Report

Section studied shows plenty of intra parenchymal hemosiderin laden macrophages.

BIOSTATISTICAL ANALYSIS

BIOSTATISTICAL ANALYSIS

CLINICAL PROGNOSIS

IMPROVE MENT OF GROUP I SUBJECTS:

The most popular non parametric statistical tool, namely, McNemar Test analysis has been employed to analyses the effectiveness with the help of a hypothesis.

IMPROVE MENT OF GROUP I SUBJECTS:

S. No	Clinical features	Before Treatment	After Treatment
		n%	n%
1.	Morning Stiffness	20(100)	3(15)**
2.	Pain And Swelling of Joints	20(100)	4(20)**
3.	Arthritis of 3or more JOINTS	12(60)	4(20)**
4.	Symmetrical Involvement	10(50)	3(15)**
5.	Restriction of Movements	20(100)	2(10)**
6.	Low Grade Fever	15(75)	1(5) **

McNemat test, C.I: 95%, *P<0.05; **P<0.01

Software: spss17 version

Number of cases: 20

Inference:

Since the p value is significant in all clinical features. So there is significant reducing of clinical features among the patients for the treatment of rheumatoid rthritis.. Hence it is concluded that the treatment was effective and **significant.**

IMPROVEMENT OF GROUP II SUBJECTS:

The most popular non parametric statistical tool, namely, McNemar Test analysis has been employed to analyses the effectiveness with the help of a hypothesis.

IMPROVE MENT OF GROUP II SUBJECTS:

S. No	**Clinical features**	**Before Treatment**	**After Treatment**
		n%	**n%**
1.	Morning Stiffness	20(100)	4(20)**
2.	Pain And Swelling of Joints	20(100)	4(20)**
3.	Arthritis of 3or more JOINTS	13(65)	3(15)**
4.	Symmetrical Involvement	10(50)	2(10)**
5.	Restriction of Movements	20(100)	3(15)**
6.	Low Grade Fever	12(60)	1(5) **

McNemat test, C.I: 95%, *P<0.05; **P<0.01

Software: spss17 version

Number of cases: 20

Inference:

Since the p value is significant in all clinical features. So there is significant reducing of clinical features among the patients for the treatment of rheumatoid arthritis. Hence it is concluded that the treatment was effective and **significant.**

Group I Subjects : Liver Function Test

S.No.	Investigations	Before Treatment Mean±SD n= 20	After Treatment Mean±SD n= 20	P value
2	SGPT	16.43±4.46	18.08±4.81	**<0.05**
3	SGOT	19.61±4.39	20.61±4.86	**0.184**
4	Alkaline Phosphatase	87.72±19.86	89.28±11.17	**0.547**

C.I: 95%; Paired samples t test. Where p<0.001, p<0.05 represents statistically significant.

Group II Subjects :Liver Function Test

S.No.	Investigations	Before Treatment Mean±SD n= 20	After Treatment Mean±SD n= 20	P value
2	SGPT	20.21±6.75	20.06±4.67	**0.906**
3	SGOT	40.21±7.58	31.85±4.41	**0.309**
4	Alkaline Phosphatase	107.27±28.27	97.40±14.20	**<0.05**

C.I: 95%; Paired samples t test. Where p<0.001, p<0.05 represents statistically significant.

GROUP I SUBJECTS :RFT

S.No.	Investigations	Before Treatment Mean±SD n= 20	After Treatment Mean±SD n= 20	P value
1	Urea	22.62±6.58	21.79±5.32	**0.483**
2	Creatinine	0.79±0.14	0.65±0.13	**<0.001**

C.I: 95%; Paired samples t test. Where p<0.001, p<0.05 represents statistically significant.

GROUP II SUBJECTS: RFT

S.No.	Investigations	Before Treatment Mean±SD n= 20	After Treatment Mean±SD n= 20	P value
1	Urea	22.61±7.30	23.69±3.93	**0.489**
2	Creatinine	0.81±0.20	0.64±0.12	**<0.001**

C.I: 95%; Paired samples t test. Where p<0.001, p<0.05 represents statistically significant.

GROUP I SUBJECTS: BLOOD INVESTIGATION

S.No.	Investigations	Before Treatment Mean±SD n= 20	After Treatment Mean±SD n= 20	P value
1	Hb	11.11±1.59	11.80±1.02	**<0.05**
2	ESR1hr	48.00±16.38	38.55±12.21	**<0.001**

C.I: 95%; Paired samples t test. Where p<0.001, p<0.05 represents statistically significant.

GROUP II SUBJECTS: BLOOD INVESTIGATION

S.No.	Investigations	Before Treatment Mean±SD n= 20	After Treatment Mean±SD n= 20	P value
1	Hb	9.72±1.47	10.93±1.00	**<0.001**
2	ESR1 hr	68.55±30.00	52.95±22.89	**<0.05**

C.I: 95%; Paired samples t test. Where p<0.001, p<0.05 represents statistically significant.

OP Cases

S.No.	Investigations	Before Treatment Mean±SD n= 20	After Treatment Mean±SD n= 20	P value
1	RA Factor	77.85±69.04	76.17±69.35	**<0.001**
2	Anti CCP	69.82±94.16	67.85±94.33	**<0.001**

C.I: 95%; Paired samples t test. Where $p<0.001$, $p<0.05$ represents statistically significant.

IP Cases

S.No.	Investigations	Before Treatment Mean±SD n= 20	After Treatment Mean±SD n= 20	P value
1	RA Factor	90.80±72.00	81.04±74.41	**<0.001**
2	Anti CCP	97.03±56.99	86.42±55.43	**<0.001**

C.I: 95%; Paired samples t test. Where $p<0.001$, $p<0.05$ represents statistically significant.

PAIN SCALE BEFORE AND AFTER TREATMENT

OP Cases

S.No.	BT PAIN Scale	AT PAIN Scale
1	8	5
2	7	4
3	9	9
4	8	7
5	9	3
6	8	5

7	9	4
8	8	2
9	9	4
10	7	1
11	8	2
12	7	3
13	9	4
14	9	2
15	8	3
16	7	2
17	8	1
18	9	4
19	8	2
20	9	3

Software: spss17 version

Variables: PAIN Scale – before treatment, after treatment

Number of cases: 20

Test: Paired t test

Confidence Interval: 95%

Correlation coefficient (r): 0.315

Before and after treatment mean difference: 4.70 ± 1.86.

P Value (2 tailed): p<0.001.

Inference:

Since the P value is highly significant (<0.001). So there is significant reducing of PAIN Scale among the patients for the treatment of rheumatoid arthritis.. Hence it is concluded that the treatment was effective **and significant.**

IP Cases

S.No.	BT PAIN Scale	AT PAIN Scale
1	9	4
2	8	3
3	9	4
4	8	1
5	8	4
6	9	2
7	7	1
8	8	6
9	9	2
10	7	1
11	8	3
12	9	5
13	8	3
14	8	2
15	7	3
16	9	4
17	7	1
18	8	8
19	8	2
20	8	3

Software: spss17 version

Variables: PAIN Scale – before treatment, after treatment

Number of cases: 20

Test: Paired t test

Confidence Interval: 95%

Correlation coefficient (r): 0.358

Before and after treatment mean difference: 5.00 ± 1.68.

P Value (2 tailed): p<0.001.

Inference:

Since the P value is highly significant (<0.001). So there is significant reducing of PAIN Scale among the patients for the treatment of rheumatoid arhritis. Hence it is concluded that the treatment was effective **and significant.**

PHYSIOCHEMICAL ANALYSIS

சித்த மருத்துவ மைய ஆராய்ச்சி நிலையம், அரும்பாக்கம், சென்னை - 600106
सिद्ध केन्द्रीय अनुसंधान संस्थान, अरुम्बाक्कम, चेन्नै - 600106
Siddha Central Research Institute
(Central Council for Research in Siddha, Ministry of AYUSH, Govt. of India)
Arumbakkam, Chennai – 600106
[Ph: 044-26214925, 26214809, Fax: 26214809, Email: crisiddha@gmail.com, Web: www.siddhacouncil.com]

10.03.2015

Name of the student: M. Shrisaranya, M.D. student, Government Siddha Medical College, Arumbakkam, Chennai-600106.

REPORT OF GANTHAGA RASAYANAM

S.NO	Parameter	Value
1	LOD	17.95%
2	Ash value	1.30%
3	Waters soluble ash	1.15%
4	Acid insoluble ash	0.075%
5	Water soluble extractive	47.6%
6	Alcohol soluble extractive	54.3%
7	Fat content	27.0%
8	Extractive values (Successive)	
	Hexane	31.2%
	Chloroform	2.6%
	Ethyl acetate	1.25%
	Ethanol	25.0%
9	TLC of chloroform extract 0.21(Grey) 026 (Grey) 0.56 (Grey) 0.70 (Grey) 0.80 (Grey) Solvent system : Toluene: Ethyl acetate (4:1.5)	

(R. Shakila)
Research Officer (Chemistry)

(Dr. K. Gopakumar)
Research Officer (Scientist 2)-I/c

CASE SHEET PROFORMA

GOVERNMENT SIDDHA MEDICAL COLLEGE

ARIGNAR ANNA GOVERNMENT HOSPITAL OF INDIAN MEDICINE

CHENNAI – 600 106

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

A CLINICAL TRIAL OF ***"UTHIRAVATHASURONITHAM''*** **(RHEUMATOID ARTHRITIS)** WITH THE SIDDHA DRUG ***"GANDHAGA RASAYANAM***"(INT) & ***"NAVANATHASITTHA THAILAM"(***EXT).

FORM l - SCREENING AND SELECTION PROFORMA

1.OP NO: .....

2. NAME: …….

3. AGE: …… 4.GENDER: …….....

5. OCCUPATION: …….. 6.INCOME: ……

7. ADDRESS: ……

……

……

8. CONTACT NO: ……

INCLUSION CRITERIA:

- Age : 18-40 Yrs Yes / No
- Sex: Both male and female. Yes/No

- Patients having Arthritis of 3 or more joints. Yes/No
- Patient having RA factor positive. Yes/No
- Patients who are willing to undergo Laboratory investigation. Yes / No
- Patients who are willing to sign the informed consent stating that He/She will conscientiously stick to the treatment during 20days but can opt out of the trial of his/her own conscious discretion. Yes / No

EXCLUSION CRITERIA

Rheumatic fever

History of sulphur allergy

Psoriatic arthropathica

Gouty arthritis

ASO positive

Sero negative polyarthritis

Progressive systemic sclerosis(PSS)

Any other serious illness

ADMITTED TO TRIAL:

YES **NO**

If yes, **OPD/IPD**

Date:

Station:

Signature of the Guide **Signature of the Investigator**

GOVERNMENT SIDDHA MEDICAL COLLEGE

ARIGNAR ANNA GOVERNMENT HOSPITAL OF INDIAN MEDICINE

CHENNAI – 600 106

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

A CLINICAL TRIAL OF ***"UTHIRAVATHASURONITHAM''*** **(RHEUMATOID ARTHRITIS)** WITH THE SIDDHA DRUG ***"GANDHAGA RASAYANAM"***(INT) & ***"NAVANATHASITTHA THAILAM"*****(EXT)**

FORM lI -HISTORY TAKING PROFORMA

1. SERIAL NO OF THE CASE: ……. 2.OP/IP NO: .....

3. NAME: …… 4. AGE: …….. 5. GENDER: ……..

5. OCCUPATION: …… 6. INCOME:

7. COMPLAINTS & DURATION:

8. PERSONAL HISTORY:

9. HISTORY OF PREVIOUS ILLNESS

10. BIRTH HISTORY

11. DIETARY HABIT:

1. Vegetarian
2. Non-vegetarian

12. FAMILY HISTORY:

Whether this problem runs in family?

1. Yes 2.No

If yes, mention the relationship of affected person(s) ----------

History of previous investigations if any ----------

Date:

Station:

Signature of the Guide **Signature of the Investigator**

GOVERNMENT SIDDHA MEDICAL COLLEGE

ARIGNAR ANNA GOVERNMENT HOSPITAL OF INDIAN MEDICINE

CHENNAI – 600 106

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

A CLINICAL TRIAL OF ***"UTHIRAVATHASURONITHAM"*****(RHEUMATOID ARTHRITIS)** WITH THE SIDDHA DRUG ***"GANDHAGA RASAYANAM"***(INT)&"***NAVANATHASITTHA THAILAM***"(EXT).

FORM III: ASSESSMENT PROFORMA

1. SERIAL NO: ……

2. OP / IP NO: .....

3. NAME: …… 4.AGE: …… 5.GENDER: .....

GENERAL EXAMINATION:

Height (cms) : …….

Weight (kg) : …….

Temperature (°F) : …….

Pulse rate (/min) : …….

Heart rate (/min) : …….

Respiratory rate (/min) : …….

Blood pressure (mm/Hg) : ……..

	Present	**Absent**
Pallor		
Jaundice		
Cyanosis		

Lymphadenopathy

Pedal edema

Clubbing

Jugular vein pulsation

SYSTEMIC EXAMINATION

Cardiovascular System : …….

Respiratory system : …….

Gastro-intestinal system : …….

Central Nervous System : …….

Urogenital system : …….

Endocrine System : …….

SIDDHA SYSTEM OF EXAMINATIONS:

1. THEGI: [BODY CONSTITUTION]

1. Vatha udal
2. Pitha udal
3. Kaba udal
4. Thontha udal

2. NILAM: [LAND WHERE PATIENT LIVED MOST]

1. Kurinji (Hilly terrain)
2. Mullai (Forest range)
3. Marutham (Plains)
4. Neithal (Coastal belt)
5. Paalai (Arid regions)

3. KAALAM:

1. Kaar kaalam
2. Koothir kaalam
3. Munpani kaalam
4. Pinpani kaalam
5. Ilavenil kaalam
6. Muthuvenil kaalam

4. GUNAM:

1.Sathuvam 2.Raasatham 3.Thaamatham

5. IMPORIGAL (SENSORY ORGANS):

Normal/Affected

Mei - ----------

Vaai ----------

Kann ----------

Mukku ----------

Sevi ----------

6. KANMENDHIRIYAM (MOTOR ORGANS):

Kai ----------

Kal ----------

Vaai ----------

Eruvai ----------

Karuvaai ----------

7. KOSANGAL (SHEATH):

Annamaya kosam ----------

Pranamaya kosam ----------

Manomaya kosam ----------

Vignana maya kosam ----------

Anandamaya kosam ----------

8. UYIR THAATHUKKAL: [THREE HUMORS] (VALI, AZHAL, IYAM)

A) VALI

Pranan –----------

Abanan ----------

Samanan ----------

Uthanan ----------

Vyanan ----------

Naagan ----------

Koorman ----------

Kirukaran ----------

Devathathan ----------

Dhananjayan ----------

B) AZHAL

Analakam ----------

Ranjakam ----------

Sathakam ----------

Prasakam ----------

Alosakam ----------

C) IYAM

Avalambagam ----------

Kilethagam ----------

Pothagam ----------

Tharpagam ----------

Santhigam ----------

9. SEVEN UDAL THATHUKKAL: (SEVEN SOMATIC COMPONENTS)

Saram ----------

Senneer ----------

Oon ----------

Koluppu ----------

Enbu ----------

Moolai ----------

Sronitham ----------

10. ENVAGAI THERVU:

I. NAADI: [PULSE PERCEPTION]

II. SPARISAM: [PALPATION]

III. NAA: [TONGUE]

IV.NIRAM: [COMPLEXION]

1. Vadham
2. Pitham
3. Kabam

V.MOZHI: [VOICE]

1. High Pitched
2. Low Pitched
3. Medium Pitched

VI.VIZHI: [EYES]

VII. MALAM: [BOWEL HABITS / STOOLS]

Niram

Irugal

Ilagal

Others

VIII. MOOTHIRAM [URINE EXAMINATION]

NEERKKURI:

Niram

Manam

Edai

Nurai

Enjal

NEIKKURI

Date:

Station:

Signature of the Guide **Signature of the Investigator**

GOVERNMENT SIDDHA MEDICAL COLLEGE

ARIGNAR ANNA GOVERNMENT HOSPITAL OF INDIAN MEDICINE

CHENNAI – 600 106

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

A CLINICAL TRIAL OF **"UTHIRAVATHASURONITHAM"(RHEUMATOID ARTHRITIS)** WITH THE SIDDHA DRUG **"GANDHAGA RASAYANAM"(INT)*&"NAVANATHASITTHA THAILAM"*(EXT).**

FORM IV : LABORATORY INVESTIGATIONS PROFORMA

1. SERIAL NO OF THE CASE: ……

2. OP / IP NO: .....

3. NAME: …… 4.AGE: …… 5.GENDER: .....

A) BLOOD INVESTIGATIONS:

BLOOD INVESTIGATIONS		**BEFORE TREATMENT**	**AFTER TREATMENT**
Hb (gm/dL)			
ESR (mm)	**½ hr.**		
	1 hr.		
T.WBC (Cells / Cu.mm)			
Differential Count (%)	**Polymorphs**		
	Lymphocytes		
	Monocytes		
	Eosinophils		
	Basophils		

	INVESTIGATIONS	BEFORE TREATMENT	AFTER TREATMENT
1	**LFT**		
2	**KFT**		

B) URINE INVESTIGATIONS:

URINE INVESTIGATIONS	BEFORE TREATMENT	AFTER TREATMENT
Albumin		
Sugar		
Deposits		

Date:

Station:

Signature of the Guide **Signature of the Investigator**

GOVERNMENT SIDDHA MEDICAL COLLEGE

ARIGNAR ANNA GOVERNMENT HOSPITAL OF INDIAN MEDICINE

CHENNAI – 600 106

A CLINICAL TRIAL OF **"UTHIRAVADHASURONITHAM'' (RHEUMATOID ARTHRITIS)** WITH THE SIDDHA DRUG **"GANDHAGA RASAYANAM"(INT)** & ***"NAVANATHASITTHA THAILAM"*(EXT).**

FORM V: CONSENT FORM

*"**I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction.***

I consent voluntarily to participate in this study and understand that I have the right to withdraw from the study at any time without in any way it affecting my chid further medical care".

"I have received a copy of the information sheet/consent form".

Date:

Signature of the participant:

In case of illiterate participant

*"**I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.**"*

Date:

Signature of a witness Left thumb Impression of the Participant

(Selected by the participant bearing no connection with the survey team)

Date:

Station:

Signature of participant:

Signature of the Guide **Signature of the Investigato**

GOVERNMENT SIDDHA MEDICAL COLLEGE

ARIGNAR ANNA GOVERNMENT HOSPITAL OF INDIAN MEDICINE

CHENNAI-106

POST- GRADUATE DEPARTMENT OF "SIRAPPU MARUTHUVAM"

A CLINICAL TRIAL OF **"UTHIRAVATHASURONITHAM'' (RHEUMATOID ARTHRITIS)** WITH THE SIDDHA DRUG **"GANDHAGA RASAYANAM" (INT)** & ***"NAVANATHASITTHA THAILAM"*** **(EXT)**

FORM VI - WITHDRAWAL FORM

SI NO:

OP / IP NO:

NAME:

AGE / GENDER:

DATE OF TRIAL COMMENCEMENT:

DATE OF WITHDRAWAL FROM TRIAL:

REASONS FOR WITHDRAWAL:

- Long absence at reporting : Yes/ No
- Irregular treatment: Yes/ No
- Shift of locality : Yes/No
- Increase in severity of symptoms: Yes/No
- Development of severe adverse drug reactions: Yes/No

Date:

Station:

Signature of the Guide **Signature of the Investigator**

GOVERNMENT SIDDHA MEDICAL COLLEGE

ARIGNAR ANNA GOVERNMENT HOSPITAL OF INDIAN MEDICINE

CHENNAI – 600 106

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

A CLINICAL TRIAL OF **"UTHIRAVATHASURONITHAM'' (RHEUMATOID ARTHRITIS)** WITH THE SIDDHA DRUG **"GANDHAGA RASAYANAM" (INT)** & ***"NAVANATHASITTHA THAILAM"*** **(EXT).**

FORM VII – PATIENT INFORMATION SHEET

Name of Co- Investigator: M.SHRISARANYA. Name **of the college:**

Govt.Siddha Medical College
Arumbakkam
Chennai-106.

INFORMATION SHEET FOR PATIENTS PARTICIPATING IN THE OPEN CLINICAL TRIAL.

I, M.Shrisaranya studying M.D (Siddha) at Govt.Siddha Medical College, Chennai, is doing a clinical trial on "Uthiravathasuronitham" (Rheumatoid Arthritis). It is becoming a most common disease, occurring throughout the world. In this regard, I am in need to ask you few questions. I will maintain confidentiality of your comments and data obtained. There will be no risk of disclosing your identity and no physical, psychological or professional risk is involved by taking part in this study. Taking part in this study is voluntary. No compensation will be paid to you for taking part in this study.

You can choose not to take part. You can choose not to answer a specific question. There is no specific benefit for you if you take part in the study. However, taking part in the study may be of benefit to the community, as it may help us to understand the problem of defaulters and potential solutions.

If you agree to be a participant in this study, you will be included in the study primarily by signing the consent form and then you will be given the internal

medicine Gandhaga rasayanam,5 gm bid with hot water for 40 days & Navanathasiddha thailam for external use.

The information I am collecting in this study will remain between you and the Co- investigator (myself). I will ask you few questions through a questionnaire. I will not write your name on this form. I will use a code instead.

The questionnaire will take approximately 20 minutes of your time.

If you wish to find out more about this study before taking part, you can ask me all the questions you want or contact M.Shrisaranya, PG Scholar cum Co-investigator of this study, attached to Govt. Siddha Medical College, Chennai-106. You can also contact the Member-secretary of Ethics committee, Govt.Siddha Medical College, Chennai.

GOVERNMENT SIDDHA MEDICAL COLLEGE

ARIGNAR ANNA GOVERNMENT HOSPITAL OF INDIAN MEDICINE

CHENNAI – 600 106

POST- GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

A CLINICAL TRIAL OF ***"UTHIRAVATHASURONITHAM''*** **(RHEUMATOID ARTHRITIS)** WITH THE SIDDHA DRUG ***"GANDHAGA RASAYANAM"*** **(INT)** & "NAVANATHASITTHA THAILAM" (EXT)

FORM X: ADVERSE REACTION REPORTING FORM

SERIAL NO:

OP/IP NO:

NAME: **AGE:** **GENDER:**

DATE OF TRIAL COMMENCEMENT:

DATE OF OCCURRENCE OF THE ADVERSE REACTION: **TIME:**

DESCRIPTION OF ADVERSE REACTION:

MANAGEMENT:

Date:

Station:

Signature of the Guide **Signature of the Investigator**

அரசு சித்த மருத்துவக் கல்லூரி, சென்னை-106

அறிஞர் அண்ணா மருத்துவமனை, சென்னை

உதிரவாத சுரோணிதம் நோய்க்கான சித்த மருந்தின் (கந்தக ரசாயணம்) (உள்பிரயோகம்)

நவநாதசித்த தைலம் (வெளிபிரயோகம்)

பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கான தகவல் படிவம்.

ஒப்புதல் படிவம்ஆய்வாளரால் சான்றளிக்கப்பட்டது

நான் இந்த ஆய்வை குறித்த அனைத்து விபரங்களையும் நோயாளிக்கு புரியும் வகையில் எடுத்துரைத்தேன் என உறுதியளிக்கிறேன்.

தேதி: கையொப்பம்:

இடம்: பெயர் :

நோயாளியின் ஒப்புதல் படிவம்

என்னிடம் இந்த மருத்துவ ஆய்வின் காரணத்தையும், மருந்தின் தன்மை மற்றும் மருத்துவ வழிமுறை பற்றியும், தொடர்ந்து எனது உடல் இயக்கத்தை கண்காணிக்கவும், அதனை பாதுகாக்கவும் பயன்படும் மருத்துவ ஆய்வுக்கூட பரிசோதனைகள் பற்றி திருப்தி அளிக்கும் வகையில் ஆய்வு மருத்துவரால் விளக்கிக் கூறப்பட்டது.

நான் இந்த மருத்துவ ஆய்வின் போது, காரணம் எதுவும் கூறாமல், எப்பொழுது வேண்டுமானாலும் இந்த ஆய்விலிருந்து விடுவித்து கொள்ளும் உரிமையை தெரிந்திருக்கின்றேன். நான் என்னுடைய சுதந்திரமாக தேர்வு செய்யும் உரிமையைக் கொண்டு **உதிரவாத சுரோணிதம்** நோய்க்கான **கந்தக ரசாயணம் (உள்பிரயோகம்) / நவநாதசித்த தைலம் (வெளிபிரயோகம்)** மருந்தின் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கு என்னை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

தேதி : கையொ

இடம் : பெயர்

தேதி : சாட்சிக்காரர் கையொப்பம் :

இடம் : பெயர் :

உறவுமுறை :

துறைத்தலைவர் கையொப்பம் : ஆராய்ச்சியாளர் கையொப்பம்:

BIBILIOGRAPHY

BIBILIOGRAPHY

- Athmaratchamirtham vaithiasarasangragam,rathna naicker& sons
- Theranthailavarga surrukam,rathnanaicker& sons
- Yugivaithiyacinthamani 800
- Pararasasekaram
- A compendium of siddha doctrine,dept of Indian medicine and homeopathy,chennai 106
- History of siddha medicine,n.kandaswamy pillai, dept of Indian medicine and homeopathy,Chennai 106
- Siddha material medica(mineral and animal kingdom) Indian medicine and homeopathy,chennai 106
- Gunapadam mooligai vaguppu-Dr .murugesa mudaliyar
- Noi nadal noimudalnadal thirattu-Dr.shanmugavelu
- Siddhamaruthuvangasurrukam-Dr.ks .uthamarayan
- Thotrakirama araichium siddha maruthuva varalarum -Dr.ks .uthamarayan
- Dravyaguna vijnana,study of the essential medicinal plants in ayurveda,Dr.J.L.N.sastry
- Text book oforthopaedics-Dr.John Ebenezer
- Common orthopaedic problems-rheumatoid arthritis,John Ebenezar , cbs publishers &distributers pvt ltd.
- T.v sambasivapillai dictionary